

Motor Age

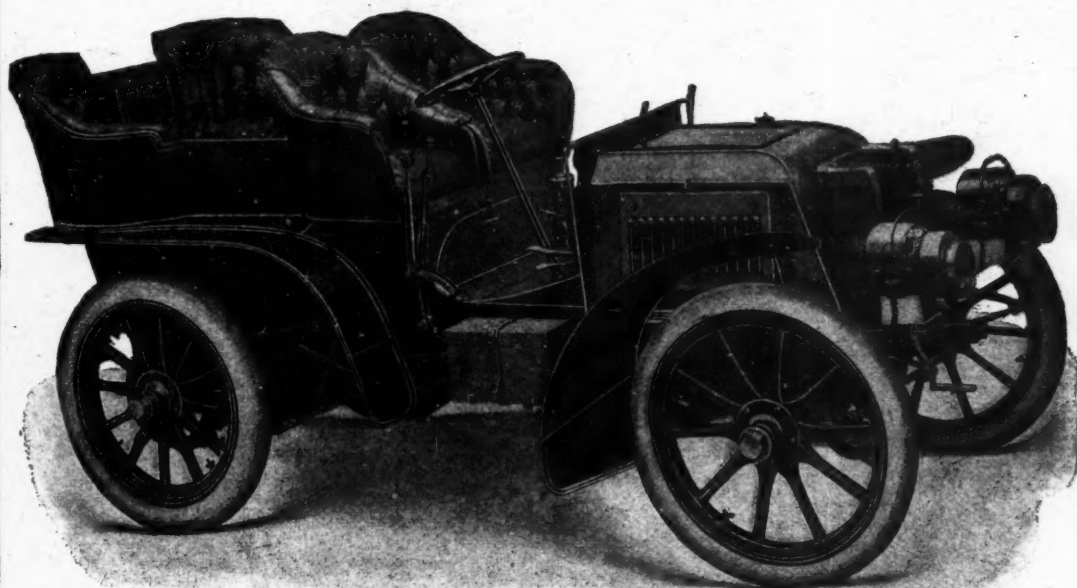
Vol. 1. No. 22

MAY 29, 1902

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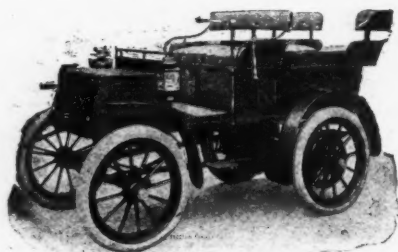
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MOTOR AGE

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VOL. 1. No. 22.

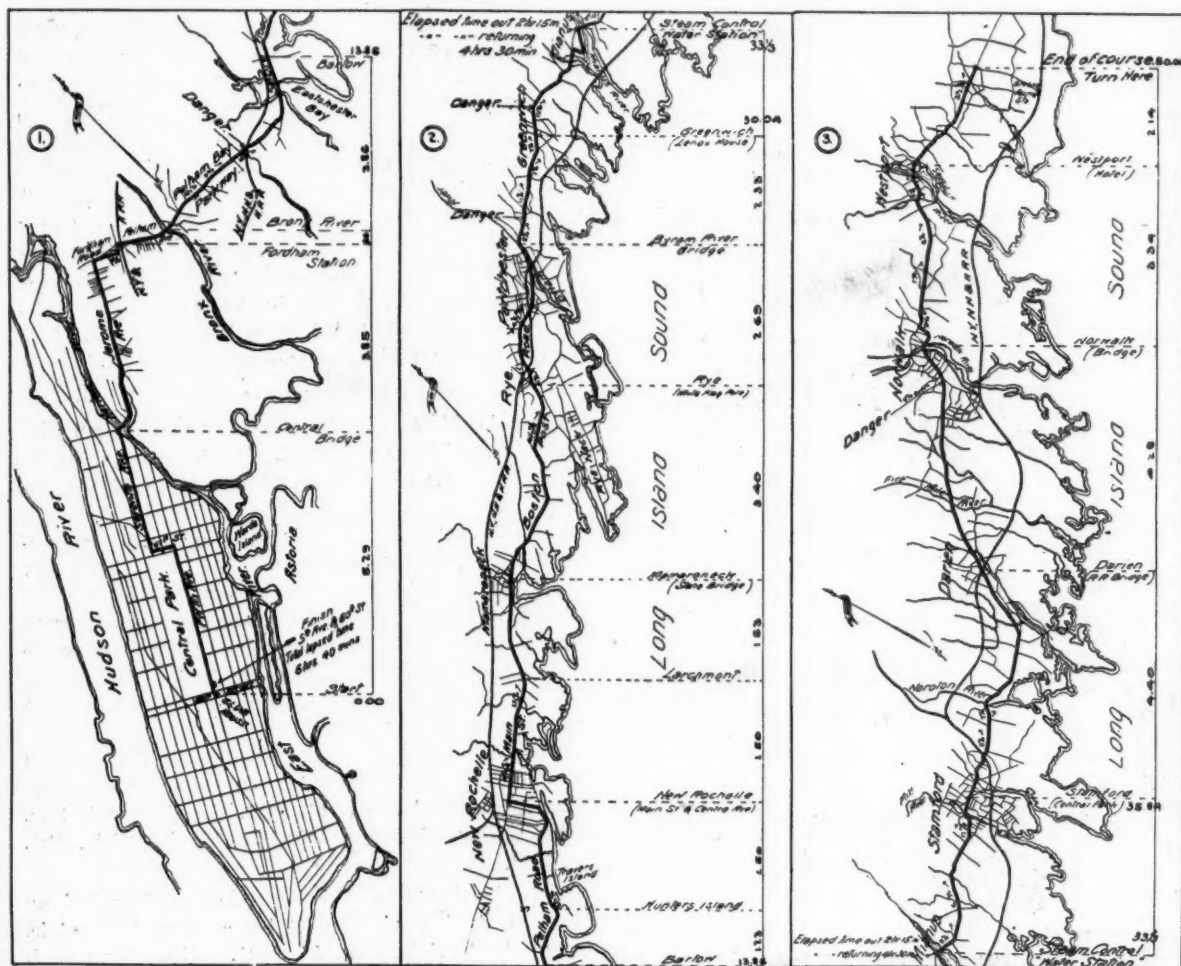
CHICAGO, MAY 29, 1902.

\$2.00 PER YEAR

NEW YORK'S ENDURANCE RUN AND TIME TRIALS

Two events of importance are scheduled for the end of the week in the neighborhood of New York. Both are promoted by the Automobile Club of America. The first occurs on Friday and will be a 100 mile endurance contest. Starting at the corner of Fifty-eighth street the vehicles will proceed to Southington, Conn., and return. Contrary to the plan followed in some of the earlier contests no gasoline vehicle will be entitled to an award unless it makes the journey without a stop. The club, recognizing the improvement which

has taken place in automobiles since it promoted its first contests a year ago, has made the attainment of first-class honors more difficult and has made the event more of a test than any heretofore given. For steam carriages there are two classes. The first, of course, is for carriages which will go the whole journey,—or try to—without a stop. The entry list for this event will make interesting reading. The second will be for those which make not more than two stops, one at 33 1-3 and the other at 66 2-3 miles, for gasoline and



water. It is probably a fact that until the late Long Island run no steam vehicle has publicly made a run of a century without a stop, hence the new class is an innovation. Three classes are provided for elec-

trics, no stop, one stop and two stops. A synopsis of the rules of the contest will be found below.

The second, and by all means the most important, so far as public interest is concerned, is the mile trials, to be held on Staten Island on Saturday. Last year, it will be remembered, the Long Island club promoted trials of this kind at which the records in all classes, which were properly timed, were badly beaten. Unfortunately darkness fell before it was possible to complete the programme and the events were held so late in the season that it was not possible to finish the trials at a later date. Saturday's trials are to commence at 11 a. m. There are eight classes, as follows:

1. Motor bicycles, carrying one person.
2. Motor tricycles.
3. Gasoline vehicles, under 1,000 pounds.
4. Gasoline vehicles between 1,000 and 2,000 pounds.
5. Gasoline vehicles, over 2,000 pounds.
6. Steam carriages, all weights.
7. Electric vehicles, all weights.
8. Free for all, any weight, any power.

The weights of the vehicles are to be taken in racing trim. Vehicles need carry only one passenger, regardless of their capacity.

The events will be decided on Southfield Boulevard, which affords an almost straight course for over two miles. The distance from the "warm-up" starting point to the start, in which the vehicles must get up speed, is about 740 yards. At the finish the vehicles will have about 665 yards to slacken speed.

It was originally intended to time the mile only but a week or two ago it was decided that, for the purpose of comparing the times made in this country and Europe it would be well to time the kilometer. Arrangements have been made to that end. There is no authentic American record for a kilometer. The mile records for the various classes are as follows:

THE RECORDS TO DATE.

Class 1.—Motor bicycles, carrying one person. No authentic straight-away record. Track record, 1 m. 12 2-5 s., by Albert Champion, at Vailsburg, N. J. Oct. 27, 1901.

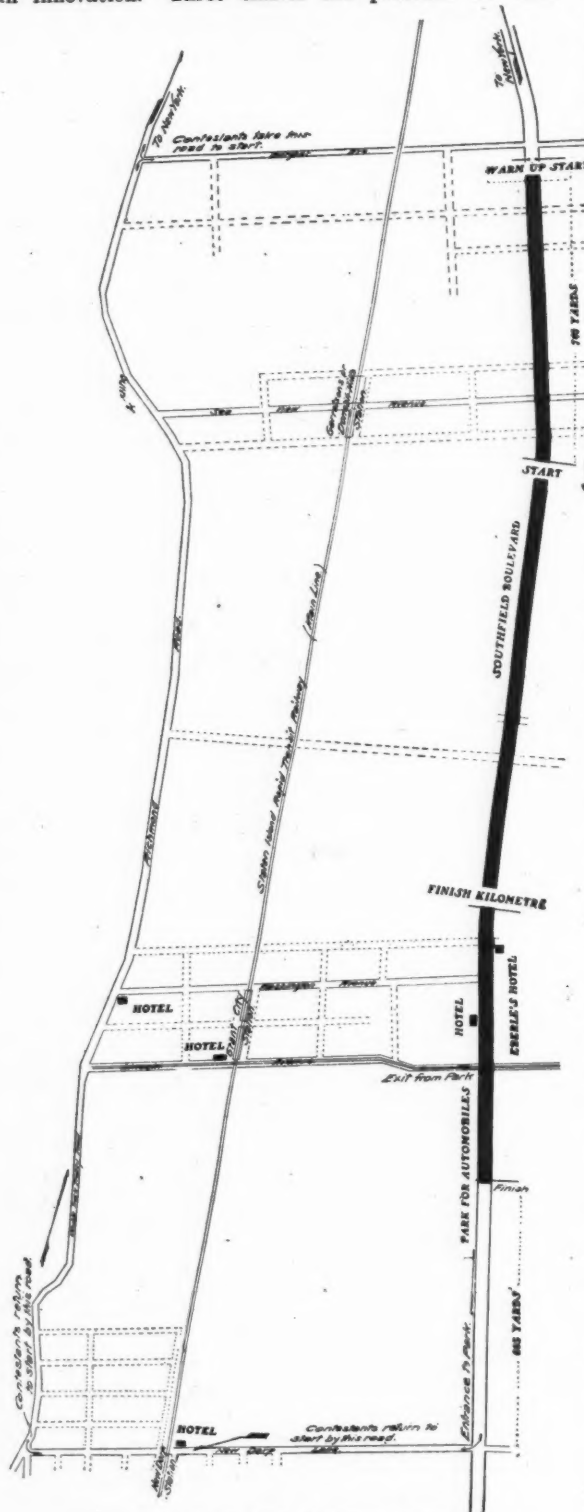
Class 2.—Motor tricycles. No authentic straight-away record. Track record, 1 m. 18 3-5 s., by Albert Champion, at Chicago, September 25, 1900.

Class 3.—Gasoline vehicles under 1000 lbs. Record 1 m. 27 3-5 s., by Jaques Longuez, 10 horse power De Dion, Long Island trials, Nov. 16, 1901.

Class 4.—Gasoline vehicles between 1,000 and 2,000 lbs. Record in doubt.

Class 5.—Gasoline vehicles over 2,000 lbs. Record 51 4-5 s., by Henry Fournier, 40 horse power Mors, Long Island trials, Nov. 16, 1901. Track record, 1 m. 06 2-5 s., by Alexander Winton, Detroit, Mich., Oct. 24, 1901.

Class 6.—Steam vehicles, all weights. Record, 1 m. 15 s., by S. T. Davis, Jr., 4½ horse power Locomobile, Long Island trials, Nov. 16, 1901. Kilometer record,



The Racing Mile at Staten Island.

29 4-5 s., by M. Serpollet, at Nice, April 15, 1902.

Class 7.—Electric vehicles, all weights. Record, 1 m. 03 s., by A. L. Riker, Long Island trials, Nov. 16, 1901. Track record, 1 m. 46 s., by A. L. Riker, at Guttenburg, N. J. Aug 18, 1900.

Class 8.—Free for all, any weight and power. For records see above and: Motor tandems, 1 m. 18 1-5 s., by Henshaw & Hedstrom, on track at Buffalo, N. Y., Aug. 13, 1901.

The road has been under treatment for the last 10 days and is rolled daily. Its rise is 18 inches in the mile, while that at Coney Island, where the trials were held last year, had a rise of 9½ feet.

The Competing Vehicles

New York, May 24.—Entries to the 100 mile non-stop endurance run on May 30 and to the mile and kilometer straight-away time trials on May 31 closed at the Automobile Club of America to-day. It having been so published entries mailed to-day will be accepted on Monday, when the lists for the run and the trials will positively close.

In the endurance run the entries number 75. There are 54 entries in Class A for gasoline vehicles—37 American and 17 foreign makes. The Class B and Class C, steam and electric entries, numbering 18, are all domestic. All the vehicles nominated are of well known makes save the gasoline vehicles made by the Coffee Automobile Co., of Richmond, Va., and by Lawrence and Hollister, two Yale students, which are to be given their first public trial. G. C. Cannon, a Harvard student, by the way, has entered a steamer of his own design in the speed trials.

A truly remarkable aggregation of machines famous for speed or notorious by reason of ownership or other circumstances makes up the list of nominations for the speed trials. There are forty of them segregated as follows:

Class 1, motor bicycles, 3; class 2, motor tricycles, 0; class 3, gasoline machines under 1,000 pounds, 6; class 4, gasoline machines 1,000 to 2,000 pounds, 8; class 5, gasoline machines over 2,000 pounds, 10; class 6, steam machines, 6; class 7, electric machines, 1; class 8, free for all, 8; total, 42.

Probably the most interesting and certainly the most remarkable bunch of all is in class 5 for the gasoline big fellows. All are foreigners, five Panhards, three Mercedes, one Mors and 1 Mercedes-Simplex. The Mors is Fournier's famous 51 4-5 second record holder, entered by Mr. Britton and "Abe" J. Levy, the book-maker, an intimate friend of Fournier and Tod Sloan.

Mrs. Howard Gould (Mercedes) is the only woman entrant. A crack chauffeur will speed her car for her. Three noteworthy Panhards are in the race—two piece record breakers, Mr. Thomas' \$17,000 former record holder and Baron de Rothschild's flyer, now en route to this country in charge of R. A. Rainey, of the Oldsmobile Co., who bought it in Paris for \$18,000, and J. E. Ewing's. W. K. Vanderbilt, jr.'s, original Red Devil, a Connstaat-Daimler-Mercedes, now owned and

entered by H. H. Rogers, jr., of the Standard Oil Co.; and Ernest Cuenod's Mercedes-Simplex, a twin to "Willie K's" car used by him in this year's races abroad, just received and the first of its type to reach this country, are also included.

In the middle weight gasoline class there are seven foreigners and three Americans. The entries include several notable machines and drivers. Ernest Cuenod's Rochet-Schneider is in it. Albert C. Bostwick will drive his new Panhard, Percy Owen will give the new Winton touring car a whirl, and A. L. Riker will show the paces of his new gasoline vehicle built under his direction at the Overman factory.

L. S. Thompson's Renault will compete with five American machines in the light gasoline class.

S. T. Davis, jr., has his racer, which won last autumn's trial in 1:15, in the steam class. A mysterious car is entered by J. W. Howard of Trenton, of which many rumors are afloat. It is said to be egg shaped fore and aft and to have developed unmanageable speed. It is also said that "Birdie" Munger, the Chicago cycle racing veteran and now a tire maker of renown, is behind it and that it will be fitted with Munger tires. The steamer designed and entered by G. C. Cannon, a Harvard student, is another notable.

The tricycle class failed to fill. In the motor bicycle class, however, "Joe" Tracy and C. H. Metz will race Orients.

In the free for all class are "Birdie" Munger's "surprise party," Mr. Davis' Locomobile, and a Baker Motor Vehicle Co. product, said to be a nest of batteries set on a skeleton frame after the fashion of Riker's electric freak last autumn. A Locomobile racer, a Mercedes and Mr. Thomas' Panhard will also be in the wind up scramble. The Baker machine is the only electric entered.

Complete List of Entries

CLASS A—GASOLINE VEHICLES.

Entrant.	Vehicle.	H. P.	Weight.	Passen- gers.
1. A. R. Shattuck.....	Panhard	12	2,500	3
2. Adams & McMurtry Co.	Packard	12	2,100	2
3. Adams & McMurtry Co.	Packard	16	2,100	2
8. G. F. Chamberlain....	Panhard	16	2,200	4
9. S. D. Ripley.....	Gasmobile	25	2,700	5
12. Percy P. Pierce.....	Pierce	3½	700	2
13. E. E. Britton.....	Panhard	16	.....	2
14. Jefferson Seligman....	Mercedes	12	1,700	4
15. Col. John Jacob Astor..	Panhard	12	2,200	4
16. W. S. Kilmer.....	Panhard	24	.....	4
35. H. S. Chapin..Haynes-Apperson		6	1,250	2
18. E. Clarence Jones.....	Benz	10	2,000	6
19. C. E. Miller.....	Coffee	12	3,000	3
20. O. W. Bright.....	Packard	12	2,200	4
23. A. J. Lamme.....	Long Distance	7	1,200	2
24. Ward-Leonard E. Co.	Knickerb'r	5	1,000	3
25. Ward-Leonard E. Co.	Knickerb'r	5	1,000	3
26. Ward-Leonard E. Co.	Knickerb'r	5	1,050	4
27. C. D. Cooke.....	Darracq	9	1,250	2
28. F. A. La Roche.....	Darracq	9	1,250	2
32. H. W. Whipple.....	Packard	12	2,200	4
35. Jefferson Seligman....	Mors	12	.....	4
34. H. S. Chapin..Haynes-Apperson		9	2,000	4
36. Peerless Mfg. Co.....	Peerless	16	1,700	2
37. Peerless Mfg. Co.....	Peerless	16	1,700	2
38. C. J. Field....Georges Richard		10-12	1,200	4
39. Alex. Fischer..Georges Richard		10-12	1,200	4
40. Ernest Cuenod..Rochet-Schneider		12-16	.....	3
41. I. W. England..Long Distance		7	1,400	2
42. E. A. Riottl....Long Distance		12	1,600	4
43. William Morgan.....	Autocar	8½	1,200	2
36. Peerless Mfg. Co.....	Peerless	16	1,700	2
37. Peerless Mfg. Co.....	Peerless	16	1,700	2
38. C. J. Field....Georges Richard		10-12	1,200	4
39. Alex. Fischer..Georges Richard		10-12	1,200	4

40. Ernest Suenod.	Rochet-Schneider	12-16	....	3
41. I. W. England.	Long Distance	7	1,400	2
42. E. A. Riottl.	Long Distance	12	1,600	4
43. William Morgan	Autocar	8½	1,200	2
44. Adams & McMurtry Co.	Packard	12	2,100	2
45. J. J. Waters	Peerless	16	1,700	4
47. Geo. Arents, Jr.	Panhard	12	2,600	4
48. D. S. Brown, Jr.	Desberon	8	....	2
49. J. H. Yockel	Gasmobile	12	1,800	5
50. J. F. Hovenstadt	De Dion	4½	850	2
51. R. J. Allyn	Darracq	16	1,700	4
52. E. B. Gallaher	Fournier-S.	8	2,200	4
53. E. B. Gallaher	Fournier-S.	8	2,200	4
54. H. C. Cryder	Gasmobile	9	1,900	2
55. H. C. Cryder	Gasmobile	12	2,500	2
56. Haynes-Apperson Co.	Haynes-A.	9	1,950	2
57. A. P. Smith	Automotor	12	1,500	4
58. Knox Automobile Co.	Knox	6	1,400	2
59. Knox Automobile Co.	Knox	6	1,400	2
60. Knox Automobile Co.	Knox	6	1,400	2
61. A. L. Riker	Riker	12	1,700	2
62. A. H. Tatham	Darracq	9	1,300	4
63. Lawrence & Hornister.	Special	8	1,700	2
70. Thos. H. Wyatt	Morgan	4	1,100	2
72. Central Auto. Co.	Cotteneau	..	1,400	4
74. R. A. Greene.	Fournier-S'rchm't	..	....	..
75. M. Levling	Bridgeport, Conn.	..	....	..

CLASS B—STEAM VEHICLES.

Entrant.	Vehicle.	H. P.	Weight.	Passen- gers.
4. International M. Car Co.	Toledo	7½	1,100	2
6. Grout Bros.	Grout	4½	1,000	2
10. W. H. Wells.	Prescott	4½	1,300	2
11. H. M. Wells.	Prescott	4½	1,300	2
7. A. G. Southworth	Toledo	7½	1,500	2
17. Grout Bros.	Grout	8½	1,300	2
21. F. E. Magee	Prescott	4½	1,300	2
22. Lane M. V. Co.	Lane	10	1,650	4
29. Locomobile Co.	Locomobile	3½	985	2
30. Locomobile Co.	Locomobile	3½	1,250	2
31. Locomobile Co.	Locomobile	6	1,750	2
64. P. H. Deming	White	6	1,400	2
65. W. T. White	White	6	1,400	2
66. M. R. Hughes, Jr.	White	6	1,400	2
67. Overman Auto. Co.	Overman	4½	1,500	2
68. Overman Auto. Co.	Overman	14	3,500	4
69. Overman Auto. Co.	Overman	4½	1,500	2
73. Conrad Motor C. Co.	Conrad	..	....	..

CLASS C—ELECTRIC VEHICLES.

Entrant.	Vehicle.	Weight.	Passen- gers.
46. Electric Vehicle Co.	Columbia.	2,200	..
71. Knight Nettel.	Vehicle Equip. Co.	2,800	4

Entries to Speed Trials

CLASS 1—MOTOR BICYCLES.

Entered by—	Vehicle.	Power.
"Joe" Tracy	Orient	3¼
Motor Cycle Mfg. Co.	Orient	4
C. H. Metz.	Orient	3¼

CLASS 3—GASOLINE VEHICLES UNDER 1,000 POUNDS.

L. S. Thompson	Renault	8
H. Ward Leonard	Knickerbocker	8
Ward Leonard Elec. Co.	Knickerbocker	8
Ward Leonard Elec. Co.	Knickerbocker	4½
Lewis Nixon	Long Distance	7
Knox Automobile Co.	Knox	6

CLASS 4—GASOLINE VEHICLES 1,000 TO 2,000 POUNDS.

Ernest Cuenod	Rochet-Schneider	15
Jefferson Seligman	Mors	12
Albert C. Bostwick	Panhard	10
E. A. Riottl.	Long Distance	7
Percy Owen	Minton	15
C. D. Cooke	Darracq	25
F. A. La Roche	Darracq	16
A. L. Baker	Riker	12

CLASS 5—GASOLINE VEHICLES OVER 2,000 POUNDS.

H. H. Rogers, Jr.	Daimler-Mercedes	35
William Guggenheim	Panhard	24
W. P. Norton	Mercedes	35
E. E. Britton	Panhard	16
J. E. Ewing	Panhard	24
E. R. Thomas	Panhard	40
R. A. Rainey	Panhard	40
Mrs. Howard Gould	Mercedes	35
E. E. Britton and A. J. Levy	Mors	40
Ernest Cuenod	Mercedes-Simplex	40

CLASS 6—STEAM VEHICLES.

L. E. Holden	Locomobile	8
G. C. Cannon	Special	10
H. M. Wells	Prescott	4½
J. W. Howard	Howard	..
S. T. Davis, Jr.	Locomobile	10
S. T. Davis, Jr.	Locomobile	7

CLASS 7—ELECTRIC VEHICLES.

Baker M. V. Co.	Baker	..
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CLASS 8—FREE FOR ALL.

W. P. Norton	Mercedes	35
Baker M. V. Co.	Baker	7
E. R. Thomas	Panhard	40
J. W. Howard	Howard	..
S. T. Davis, Jr.	Locomobile	10
S. T. Davis, Jr.	Locomobile	7
41. H. B. Ruggles (Rugsmobile)	gas	2½
42. Mobile Co. of Am. (Mobile)	steam	14

(....) indicates no details in meeting blank.



When, in June, 1900, the governor of Madagascar was in Paris and suggested the use of automobiles on the island, he was assured by the manager of one of the big factories that it would be useless to try to use them on account of the condition of the roads. He determined to try it, however, and imported a few vehicles to make the test. He has since made such improvements in the roads as to insure the future success of the automobile,

a feature of great value in the life of the island because of its lack of beasts of burden. The climate of Madagascar is so hot and so changeable that the automobile is not likely to be used a great deal for sporting purposes, but as a commercial feature it is expected to grow remarkably and to prove of the utmost value. The illustration shows the automobiles owned by the government and their native operators.

RULES FOR 100-MILE NON-STOP CONTEST

The contest is open to all classes of self-propelled vehicles so constructed that at least two passengers are carried seated side by side, but no manufacturer, agent or private owner is allowed to enter more than three vehicles in any one class.

Vehicles are classified as follows:

Class A—Gasoline vehicles: To complete the 100-mile course without stop.

Class B—Steam Vehicles: Section 1. To complete the 100 miles without stop. Section 2. To complete the 100 miles, with two stops. The first stop to be made 33 1-3 miles from New York, where gasoline and water may be taken and the vehicle lubricated, but not adjusted or repaired while standing still. The second stop will be made 66 2-3 miles from the start, where gasoline and water may be taken and the vehicle may be lubricated, but not adjusted or repaired while standing still.

Class C—Electric vehicles: Section 1. To complete the 100 miles without stop. Section 2. To complete the 100 miles with one stop 50 miles from the start, where batteries may be replaced, but the vehicle not adjusted or repaired while standing still. Section 3. To complete the 100 miles with two stops, the first 33 1-3 miles and the second 66 2-3 miles from the start, at both of which batteries may be replaced, but the vehicle not repaired or adjusted while standing still.

Every vehicle shall carry an official observer provided by the club. Observers will record the actual time and the time of stoppages from the actual stop to the actual start of the wheels, from whatever cause, and the cause of each stop must be recorded on the record sheets. Observers will also keep record of the amount of gasoline taken on board after the start. It is the duty of the official observer to caution the operator not to exceed the speed limit of 8 miles per hour in cities and 15 miles in the country. Should this caution be disregarded the observer is to note this fact upon his record sheet. Observers are expected to render any assistance within their power to the operator of the carriage.

There is no restriction as to operators, but no change will be permitted after the start is made, except in case of illness.

Each vehicle must carry at least two passengers, one of whom shall be the official observer appointed by the club.

All stops will be timed and recorded by the official observers. Stops for the following causes will be considered involuntary stops and will not count against the vehicle or render it ineligible to compete for a certificate, although such stoppages must be recorded as set forth above: First, tire troubles; second, stoppages by the police; third, to avoid frightening timid horses; fourth, to render aid in case of accident; fifth, impassable railroad crossing; sixth, road blocked by traffic; seventh, demands of nature. If necessary an explosive engine may be stopped during the time required for repairing tires, or because of frightening horses. During stoppages from any of the causes above enumerated, the vehicle shall be subjected to no attention or manipulation of any kind, except replacing or repairing tires, and shall proceed as soon as the cause for stoppage has ceased.

An average speed of 8 miles per hour (exclusive of the involuntary stops) must be maintained over the whole course to render a vehicle eligible for a certificate. No speed in excess of 15 miles an hour will be recognized. Vehicles will not be permitted to arrive at and pass the control at Mianus, 33 1-3 miles, before the expiration of 2h. 15m.; nor the same place on the return journey in less than 4h. 30m. Vehicles will not be permitted to arrive at the finish before the expiration of 6 hours 40 minutes from the start. Vehicles which arrive before that time will, by that fact, be subject to disqualification. Detours to avoid arriving at the turning point before time will be counted as

stops. Any driver, owner, nominator or manufacturer of any vehicle taking part in the contest who shall be disqualified will be reported to the American Automobile Association and will be unable to compete in future contests until the Automobile Club of America shall have removed the ban. See resolution adopted by A. A. A., May 7, 1902. On passing a green flag on the right side of the road the vehicle shall slow down to a speed of 8 miles per hour until a white flag is passed, when speed may be resumed, not to exceed 15 miles per hour in Connecticut and 20 miles in New York.

Vehicles passing other vehicles going in the same direction must pass to the left in accordance with the rules of the road, and vehicles meeting each other must pass to the right. Vehicles must keep to the right of the center of the roadway, except when there are no approaching vehicles and the conditions are such that it is impracticable to travel on the right side of the roadway. If, for any reason, it is necessary for vehicles to travel on the center or left side of the roadway such vehicles must cross to the right side. Irrespective of the condition of the roads, as soon as signaled by an overtaking or an approaching vehicle. Vehicles must signal one another when approaching in either direction.

Certificates will be awarded only to those vehicles which go over the course as per the time limit without a stop other than those mentioned as excepted, and the stops provided for classes B and C, and will state: Name of maker; entered by; number of passengers carried; make and size of tires; amount of gasoline consumed; amount of gasoline consumed in proportion to weight; amount of water consumed (for steam vehicles); rated horsepower of motor. For electric vehicles: Ampere hour capacity of battery; number of cells; weight of battery; number of replacements.

The operator of each vehicle will be provided with a badge showing his official number, which shall be conspicuously worn on the outside of the coat. Each observer will be provided with a badge, bearing a corresponding number, which must be similarly worn. There must be no mark or sign on any vehicle other than the owner's initials and the manufacturer's name or number plate as affixed to a vehicle when sold to a customer.

Steam and gasoline vehicles must report Friday morning, May 30, at 7 a. m., at the corner of Fifty-eighth street and Sixth avenue, where gasoline and water tanks will be examined and shortages replaced so that all such tanks shall contain their full capacity. The vehicles will line up, irrespective of numbers, in Fifty-eighth street, on both sides of the street, facing east. The first vehicle will take its place in Fifty-eighth street at the corner of Fifth avenue. Entry into Fifty-eighth street must be made from Sixth avenue. No vehicle will be permitted to enter from Fifth avenue or from the Plaza. Vehicles will be started at half-minute intervals. The start will be made at 8 o'clock sharp.

Every vehicle driven by an explosive motor shall have its water tank and gasoline tank full at the start. On the return of such vehicle the gasoline tank will be refilled and the amount of gasoline required for such purpose measured. Every vehicle driven by steam shall at the start have the gasoline and water tanks filled full. At 33 1-3 miles the tanks will be filled and a record kept. At 66 2-3 miles the tanks will be filled and a record kept. On finishing the tanks will be again filled and a record kept. The club will furnish the gasoline and water.

Any one desiring to enter a protest must deposit \$10, which will be retained if the protest is not sustained. He must submit his protest in writing before 11 p. m. of the day of the contest.

The finish will be made in a roped off quadrangle at Fifty-ninth street and Fifth avenue (Park Plaza). Every vehicle finishing must enter this quadrangle and not leave it until ordered so to do by the committee or its representative.

Motor Age

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The editor will be glad to receive communications for publication. They must be accompanied by the names and addresses of senders, which will not be used if request be made to that effect. Contributions will not be paid for unless accompanied by notice that payment is expected.

Subscription, Two Dollars a Year. - - Six Months, One Dollar

A. A. A. RESOLUTION NEEDS AMENDMENT.

According to a resolution adopted at the last meeting of the American Automobile Association no person who is disqualified in a contest, for any reason whatsoever, will be eligible to compete in any other contest under the association's rules until he has been reinstated by the club which inflicts the penalty. No provision is made in the resolution for an appeal, so that any race promoting club may assume the authority of what is supposed to be the governing party without question as to the justice of its action. While it may be assumed that clubs will, in a great majority of cases, act fairly and without malice, it is by no means fair to make one party to a disagreement the sole judge of the merits of a case. To inflict a penalty which shall apply to a single event may be fair enough and no serious injustice may be done, but to place in the hands of a club the power to suspend a man for life is beyond the bounds of reason. In a recent interview the president of the association, having been asked whether the association really intended to enforce the rule, replied that "there will be no suspension without the approval of the A. A. A. executive committee." That is insufficient. The question is whether long-continued and possibly permanent punishment shall rest with the association or with any single member thereof. It is a question which should be settled before cause for a dispute arises. The resolution should be amended.

A TEST—NEW YORK TO CHICAGO.

That there will be an endurance run between New York and Boston and return, under the auspices of the Automobile Club of America some time this summer has, we believe, been decided. That a longer contest is needed and could be arranged to the satisfaction of

competitors and manufacturers and to the great educational advantage of the public is certain. In the days when bicycles were as great curiosities to the rural classes as automobiles are today, manufacturers found in long-distance road contents a method of advertising which proved of inestimable value to the industry. At this later day a large majority of the people believe, despite the tests so far promoted, that the automobile is a very uncertain form of transportation. They have been taught to believe this by the daily press and actual demonstration is needed to convince them to the contrary.

No contest so far promoted has been a fair test of the actual merit of the automobile of 1902. As has already been remarked a 100-mile contest over carefully selected roads proves little that is not already known by people who know anything at all about automobilism. The New York-Boston contest will, of course, be the most convincing thing in its line of the season, unless some one promotes something of greater length.

The promotion of something still more arduous is a matter worthy the attention of the clubs. It might occur in October, as being the most comfortable month for operators, and might take the form of a run from New York to Chicago. Last season the Automobile Club of America found no difficulty in securing the co-operation of clubs and individuals along the route of the run to Buffalo. The Chicago club, in its less pretentious effort, was equally fortunate in the arrangements for its run to the same point. By a combination of effort of the two arrangements might be made for such a contest as that proposed, which would reflect great credit on the industry, the participants and the promoters, and which would take its place as possibly the greatest event of the kind ever undertaken in this or any other country.

THE LIABILITY OF AUTOMOBILISTS.

In charging the jury which gave judgment against E. R. Thomas for \$3,125 for causing the death of a child in New York, Justice Giegerich, in the Supreme Court, laid down the law in a manner worthy of careful observation by every automobilist. It is the first decision of the kind and as such will doubtless form the basis of opinions to be rendered in other states. Justice Giegerich's charge is, in part, as follows:

"Being or playing upon a street is not of itself contributory negligence in such a child. If the automobile came upon the deceased under circumstances calculated to produce fright or terror, and such fright or terror was produced thereby, and this caused an error of judgment by which the boy ran in front of the automobile, the error was not contributory negligence.

"The mere rate of speed, whether high or low, lawful or unlawful, is immaterial unless it entered into the cause of the accident. An automobile has the same duties to perform when meeting pedestrians or other vehicles in the streets of this city that other vehicles are subjected to.

"No owner or operator of an automobile is exempt

from liability for a collision in a public street by simply showing that at the time of the accident he did not run at a rate of speed exceeding the limit allowed by law or the ordinances. On the contrary, no matter how great the rate of speed may be which the law and the ordinances permit, as a general rule he still remains bound to anticipate that he may meet persons at any point in a public street, and he must keep a proper outlook for them and keep his machine under such control as will enable him to avoid a collision with another person also using proper care and caution.

"If necessary, he must slow up, and even stop. No blowing of a horn or of a whistle, nor the ringing of a bell or gong without an attempt to lower speed is sufficient if the circumstances at a given point demand that the speed should be slackened or the machine be stopped, and such a course is practicable, or, in the exercise of ordinary care and caution, proportionate to the circumstances, should have been practicable.

"The true test is that he must use all the care and caution which a careful and prudent driver would have exercised under the same circumstances.

"On the other hand, every such operator of an automobile has the right to assume and to act upon the assumption that every person whom he meets will also exercise ordinary care and caution according to the circumstances and will not negligently or recklessly expose himself to danger, but rather, make an attempt to avoid it."

FREIGHT RATES TO THE COAST.

The subject of freight rates is now under consideration by the executive committee of the National Association of Automobile Manufacturers and one of the features which should, and doubtless will, receive early attention is the exorbitant rate on automobiles and parts between Chicago and the Pacific coast. Heretofore manufacturing has not been carried on to any great extent in the far west. Frequent attempts have been made to establish factories but, generally because the distance to the source of supplies is too great, most of them have been abandoned. Should the railroads continue their present policy toward the shipment of automobiles, however, the Pacific coast would be enabled not only to establish factories for their manufacture but to quite easily undersell eastern makers.

The trade now carried on between the east and the Pacific coast is insignificant compared with that which might be transacted were the rates as favorable as they should be. About a month ago *MOTOR AGE* called attention to the shipment of an automobile from Chicago to Australia by way of London, for the reason that it could go the entire journey by that route for less money than it could go to San Francisco. On Monday of this week a Chicago house received an order from the coast, with explicit instructions to so pack the material as to entirely hide its identity, the object being to avoid the extortionate rate. If the association can correct this evil it will earn the thanks of every one interested, except perhaps a few concerns which contemplate the

establishment of automobile factories and the manufacture of their own parts on the Pacific coast.

Chicago Club's Endurance Run

The entry blanks for the 100 mile run of the Chicago Automobile Club will be ready for distribution this week. The hour of starting will be 10 a. m., but vehicles must be ready in the positions assigned them one hour earlier. The start will be at the club house on Michigan avenue. Along the curb will be marked a number of spaces corresponding with the number of entries and the cars will be started as nearly as possible in numerical order. At 9 o'clock the cars in line will be allowed to move up, in order, and fill any vacant spaces. Cars which arrive after that time being relegated to the tail end of the line. Cars are to be numbered in the order of receipt of entries.

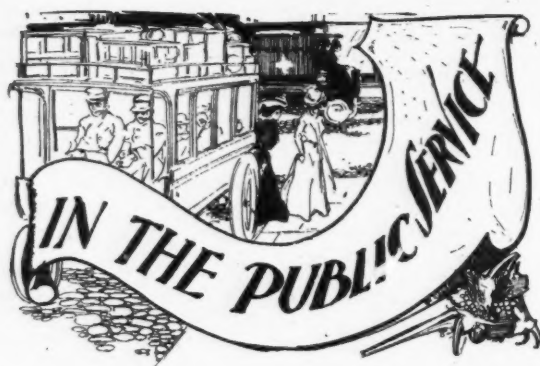
The rules generally will be very similar to those of eastern contests. The club will supply observers and preference will be given those invited by the club in case there are more volunteers than are necessary. They will be allowed to assist the operator only when the vehicle is stopped and the time penalty is being enforced. The same rule applies to other passengers.

Particular attention has been given to enforcement of the speed laws. The course will be divided into six control points, 15 miles apart and a car may not pass any of them until the time required by the legal speed limit has expired. He must not reach the first control in less than 1 h. 15 m., nor any other inside of one hour. The minimum time for the trip will be 7 h. 15 m. Five miles from each control point a white banner will be displayed and another at 10 miles to enable observers and drivers to judge the speed of the car and prevent passing the control before the time specified.

Gasoline vehicles will be required to make the journey without a stop to obtain a first class certificate, but for steam and electric cars the conditions are less exacting than those of recent eastern contests, stops being allowed so frequently that there can be no question about their ability to go the distance.

No Disqualification Without Good Cause

New York, May 24.—The American Automobile Association board of governors will hold its next meeting on Tuesday. A *MOTOR AGE* man called on President Scarritt this week to learn what progress the association was making. "The completion of our committees," said he, "is necessarily slow work. We are getting the membership rolls of the various clubs, and after that is accomplished we will have to get suggestions from the clubs as to the best men to be put on the various committees." Mr. Scarritt was also asked whether the A. A. A. really intended to accept any disqualification of an automobilist solely on the say so of the complaining club. "You can rest assured," he replied, "that there will be no suspension without the approval of the A. A. A. executive committee."



The following letter is printed for the benefit of makers who may be able to supply the vehicle required:

Bridgeport, Conn., May 24.—Editor MOTOR AGE: Will you kindly furnish me with the addresses of manufacturers of motor trucks? My firm has instructed me to either purchase or design a four-ton truck. This truck is to be operated from our foundry to our factory, carrying a maximum load of four tons and should have a speed of eight miles per hour. In regard to the road that this is to be operated on, I would say it is smooth macadam, with a grade of not over 2½ per cent, which makes the hill-climbing part practically a factor that can be ignored.

My experience in the past has proven to me quite conclusively that a steam truck, fired with kerosene, would be preferable to us to any other, and anything that you may be able to do for me, in regard to bringing manufacturers of this class of vehicles and myself in communication, will be gladly welcomed. Awaiting an early reply, I remain,—Yours, etc., E. H. White, with the Eaton, Cole & Burnham Co.

Morgan's Vehicles in Service

Worcester, Mass., May 24.—The factory of the Morgan Motor Co. at Greendale is completed; all the machinery is in place, and the work of turning out horseless trucks has begun in earnest. About seventy-five men are employed and it is hoped that within a year this number will be more than doubled.

There are seven trucks in all, each weighing about 3 tons and have a capacity of between 3 and 4 tons. Since the first truck came to Worcester a month ago hardly a day has passed that a truck has not made one or more trips from Greendale to the center of the city, either bringing a load or carrying back one. In all these trips there has not been the least suggestion of a balk.

Ralph L. Morgan, who is at the head of the new company, is in Boston and has received many inquiries regarding the trucks. As a result of this interest in the trucks, one of them is to be sent to Boston, where it will be used to demonstrate before prospective buyers.

As the motor truck was needed in Boston to show

itself before Boston business men, the members of the company thought it would be a good idea to send it overland, so it was decided to send in by its own steam. Accordingly Engineer Lemuel Knisley, of Toledo, O., who came east with the machine, was detailed to take the truck to Boston this afternoon. It was decided to send the old truck, which was run over 30,000 miles.

The six trucks which are now at the Greendale factory are being finished as rapidly as possible. They are nearly ready to run and will be used by the company about the city for heavy trucking and several trips a day will be made to the center of the city. A large number of the heavy machines used at the shop and nearly all of the heavy material used in finishing the building was carried from the city to the factory in the first truck.

The start from Greendale was made a trifle after 1 o'clock and it is expected that the truck will arrive safely in Boston about 5:30. The run could be made much more quickly than this if necessary, but it was decided not to hurry things, but to move along evenly at the rate of 10 or 12 miles an hour. Upon leaving Worcester there was a ton load on the truck, which was being carried to Boston for a local company.

The truck went through Shrewsbury, Northboro and along through the small country towns into Boston. Without a single exception, in the small country towns, it was the first motor truck which the residents had ever seen and the commandment, "Thou shalt not rubber or stretch thy neck," was not observed. Everybody "rubbered."

Tire Troubles in Extremes of Temperature

New York, May 26.—S. F. Gates, superintendent of the Automobile Transportation Company of Porto Rico is in the city trying to find the solution of a trouble which is causing his company annoyance and expense. The company runs an automobile stage line over the military road between Ponce and San Juan, a distance of about 100 miles. It has in operation five vehicles. The line has proved popular and everything would be satisfactory if it were not for trouble with tires. The weather in Porto Rico during the day is very hot, but the evenings are cool, sometimes cold, and these rapid changes in temperature are causing no end of trouble to the tires on the company's machines. Mr. Gates says he has tried several makes with indifferent success, as the changes between the extreme in temperature seems to cause the rubber in the tires to disintegrate. Mr. Gates can be addressed care of the eastern office of the MOTOR AGE.

FISHKILL, N. Y.—An omnibus automobile bound for Millbrook passed through here Saturday evening. The machine is furnished by the manufacturers on trial for the proposed Millbrook-Poughkeepsie stage line. If it answers the requirements it may be used till a similar one can be found, or one more suitable may be decided on. This conveyance is intended to carry nine passen-

gers besides the driver. The party left New York with the auto between 8 and 9 o'clock in the morning. Poughkeepsie was reached at 7 in the evening, and then after supper the machine was run to Millbrook. None of the grades bothered the vehicle to any extent. The power is furnished by a gasoline engine.

BEATRICE, NEB.—A. J. Wright, of the Chicago Motor Vehicle Co., has asked the city council for a 10-year franchise to operate a motor vehicle line here. The committee to whom the matter was referred made Mr. Wright a proposition to grant said franchise provided the company pay the city 1 per cent of the gross receipts.

BALTIMORE, MD.—At the Maryland Merchants' Industrial Exposition, now in progress, the Schaum Automobile & Motor Mfg. Co. has an exhibit and is running a line of automobiles around the Midway.

SAN ANGELO, TEX.—The automobiles for street car service in San Angelo are complete and will be running shortly.

DUNKIRK, IND.—The Mobile Transit Co. has placed an order for two additional automobiles, which will be in operation by June 1. The company is operating between Redkey and Dunkirk, and business has grown until four machines will be needed to handle the passenger and excursion traffic. All the mobiles carry fifteen passengers and two tons of baggage, make all railroad connections at each town and side trips by arrangement. The new machines will be used between Dunkirk, Muncie, Pennville and Portland.

TRENTON, N. J.—The auto to run between Bordentown, Crosswicks, Allentown and Columbus is expected to arrive at the Bordentown freight station this week. According to the time table already provided the auto will leave Allentown at 5:40 a. m. and Crosswicks at 6:10, arriving at Bordentown at 6:30. It will then make a trip to Columbus, reaching that village at 6:54. Leave Columbus at 6:55 and arrive at Bordentown at 7:20. The fare will be the same to and from all points—25 cents. Five or six round trips will be made daily. The undertaking is a local enterprise, and if successful will be broadened so as to reach other towns.

LOUISVILLE, KY.—Oscar L. Day, who owns the stage line between Louisville and Fairfield, is thinking of selling his horses and coaches and operating an automobile line. Day uses two stages. He has three sets of horses, twelve in all. His schedule is 7 hours each way, the distance being 33 miles. Ira S. Barnett, of Sutcliffe & Co., with whom Day has been conducting negotiations, assures him that the trip can be made by automobiles in 3 hours, and certainly in 5 the year around. Under this arrangement Day would make the round trip daily, two vehicles being unnecessary. He has a contract to carry the mail, and his route lies through Mount Washington.

RHINEBECK, N. Y.—Colonel John Jacob Astor is at the head of a new company organized with a capital of \$17,000 to run a line of automobile stages between this village and the New York Central station at Rhinecliff, a distance of two and a half miles. Three large autos, equipped with heavy gasoline engines and capable of carrying a dozen passengers each, are being constructed for this service. The fare will be 25 cents each way.

ST. LOUIS, MO.—The Eads bridge automobiles carried 5,318 passengers across the river Sunday, according to President L. G. McNair, of the Interstate Transit Co., and are now daily averaging almost 3,000. Eighteen electric vehicles are in operation.

DAYTON, O.—There are several booming subdivisions adjoining Dayton that suffer for the want of car lines. The latest agitation is an automobile line. The idea is to operate the line from a point at about one-half to one mile out the Salem road and carry passengers to such points as would benefit traffic along that line. It is said that another automobile line is talked of, to be operated from Kingsville to the north gate of the Soldiers' Home, where patrons can get a 4-cent fare and a transfer.

MCPHERSON, KAN.—Temple Bros. took contract yesterday for a first-class, 7 horsepower automobile to be completed inside of 60 days. This is to be an automobile mail wagon for Joseph Bitticker, near Garden City, Kan., and will be used on a star mail route of 112 miles, which will be made each day. The material for this automobile has been ordered from St. Louis and the work will begin as soon as it arrives.

LITTLE ROCK, ARK.—Henry Buddenburg, of the Buddenburg Mfg. Co., and Mr. Chas. Schuttler, of Baring Cross, are contemplating running an automobile line from the junction of Main and Markham streets to the foot of Big Rock for the accommodation of passengers who wish to take a pleasure or business trip to the fort or to Argenta, Baring Cross or intervening points. The gentlemen back of the enterprise propose to start two with trailers attached. If the enterprise meets with success and the patronage justifies it the number of machines will be increased.

PIERRE, S. D.—F. W. Edson, of this city, who has the mail contract between here and Laurel, forty miles north, has constructed a light motor wagon which he expects to use on the route. The wagon uses gasoline for power and on tests shows a good speed on ordinary roads. If he can make a success of this he can operate the line at a much smaller expense than by horses. Besides the Laurel line he has several other mail contracts and may fit them all out with the same kind of vehicles.

Automobile Exhibit at St. Louis Exposition

The St. Louis exposition has assigned to the building devoted to transportation exhibits the largest space of any on the ground. It is to be rectangular, 1,300 by 525 feet, covering an area of 15 acres, a shape which allows every foot of space to be utilized to advantage. The facades show a pleasing adaptation of the French Renaissance. The building combines a feeling of the magnificent exposition building and of the high class railroad depot which prevails on the European continent. The automobile industry will be assigned a prominent space in the building. The exposition having been postponed until 1904, there is abundant time for the preparation of exhibits. Early interest on the part of exhibitors will be to their advantage and greatly facilitate the work. The department is ready to enter into correspondence with those who are considering making large and important exhibits. Willard A. Smith, chief of the transportation department of the World's Fair, will occupy a similar position at St. Louis.

To Make American Rochet-Schneider

New York, May 24.—M. Ernest Cuenod says he is arranging to have the Rochet-Schneider built in this country on the same plan as the C. G. V. is being manufactured at Rome N. Y. Two concerns claim confidentially that they are "in" in this deal. There is "something doing" without doubt and developments are awaited with curiosity and interest.

Carl Simonsen, of Simonsen & Neilson, of Copenhagen, has sailed for this country and will be at the Astor House, New York, during the first few days of June. After that he will visit Chicago and other cities to make arrangements for the firm's imports of cycles, motors, parts and accessories of every kind for next season.

Faulty Construction and Ways of Overcoming It

BY L. B. ELLIOTT

Far as this country is ahead of the remainder of the manufacturing world in some directions—as, for example, the production of labor-saving machinery—there are some matters which need attention before we can win the admiration of the best class of mechanics in other parts of the world. An English scientist, expressing his opinion of the manufacturing methods of various countries, once expressed himself about in this style: If an Englishman builds a piece of machinery it will be well made but cumbersome. A German will do good work, but it will be clumsy and ugly in design. A Frenchman's work will be fine, but too light and complicated. A Yankee will take some cast iron, paint it green and stripe it red.

In later years we have been told by more than one of the French makers of automobiles that we are a long way behind Europe in the production of automobiles and, making due allowance for the spirit of rivalry by which these remarks may have been prompted it must be admitted that the criticism is not entirely unwarranted. The sudden rise in popularity of the automobile occurred just at the time when makers of certain lines of other goods were seeking a new field. The result has been that a great many people have come into the automobile parts business who have little knowledge of its requirements. It is the desire of the writer to describe and illustrate a few parts, all based on actual experience show the necessity of improvement.

The upper view in Figure 1 is the stem of a needle valve, supplied by a maker of gasoline motors. It was made from a piece of $\frac{1}{4}$ -inch round rough iron, known to

the trade as black iron, not guaranteed true to gauge or perfectly round. A $\frac{1}{4}$ -inch thread was cut on the end, having only 20 threads to the inch, and had been cut on the piece with a not very sharp die, as the threads were about half gone in some places. The point of the stem, which is supposed to regulate the flow of gasoline to a nicety, was made as shown in the drawing, but not so true, as it had evidently been filed. One-sixteenth of a turn would shut off the gasoline supply, or let it stream out copiously. The lower cut in Figure 1 shows

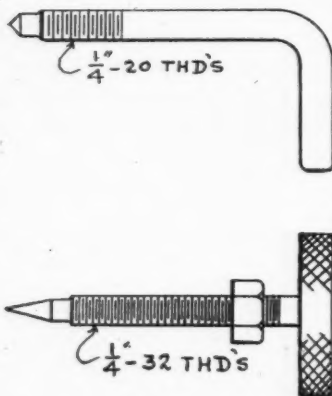


Fig. 1.

how the needle valve stem should be made, with long, sharp point and fine thread so as to give close adjustment.

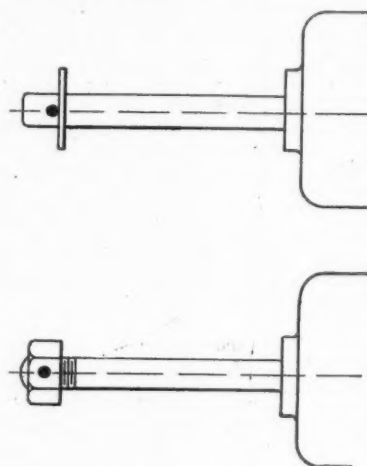


Fig. 3.

A lock nut should be provided to prevent the stem from working out of place. A small knurled hand wheel should be provided, instead of the stem being bent over, as in the upper view, to prevent it from being placed

out of adjustment by accident.

Figure 2 shows in the upper view, the chamber which came with the before-mentioned stem. It was found impossible to keep the stuffing box tight around the stem, and the so-called needle point on the end of the stem almost entirely filled the space at the bottom of the thread where the gasoline

was supposed to flow around it, and out to the carbureter through the small hole into which the needle point goes. To correct this, a needle valve body similar to the one shown in the lower cut was devised, having a chamber around the needle point portion of the stem, the stuffing box made with loose bushing, setting inside the end of the stuffing box, and the thread on the stem passing through the stuffing box, the stem used being the one shown in the lower cut in Figure 1. No trouble was experienced with this needle valve, either with stuffing box or regulation. The difference in construction means just the difference between a needle valve that won't work, that when once set gives the desired amount of gasoline, does not clog nor leak, and when once set remains set.

Still on the subject of valves, the writer would like to

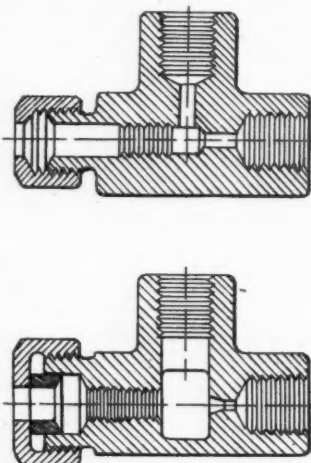


Fig. 2.

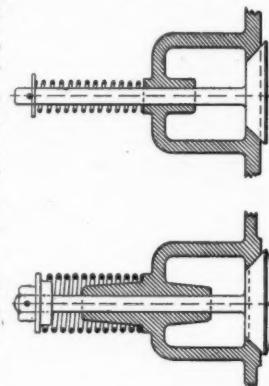


Fig. 4.

call attention to another defect which is found in connection with a great many ready-made motors. Figure 3 shows, in the upper view, a valve stem of either exhaust or inlet valve, as the case may be. The only means of holding the spring, which goes on over the stem, is a split pin and washer. This method of securing the spring which seats the valve is very poor, and is used simply as a matter of cheapness. The hammering of the spring upon the washer will cause the split pin to be sheared or broken off, the spring lost and the motor disabled.

The lower cut in Figure 3 shows the proper method, a hexagon nut, which goes upon the thread upon the extreme end of the valve stem. After locating the nut a hole is drilled through both nut and stem and a split pin inserted. The strains from the vibration of the valve spring are taken up by the thread on the stem and the split pin is only used to keep the nut from working off the stem. The writer has used this construction for a number of years and has never known of one giving way or coming off. Two lock nuts are sometimes used, but are not to be desired, as they will eventually become loose and finally drop off.

Figure 4 shows the wrong and the right way to design a valve and valve stem guide. The lower view shows the proper method, giving the valve stem a longer guide and making the spring of larger diameter and heavier gauge wire; it will have exactly the same flexibility as a spring of smaller diameter and lighter gauge wire if properly proportioned and will last five or six times as long.

Many builders of motors equip their exhaust valve operating mechanism with cams similar to the one shown in the upper view in Figure 5. While this style of cam will operate the valve and give the desired results, it will pound a great deal, and not only wear itself, but the cam roller to pieces, even if hardened, and make a

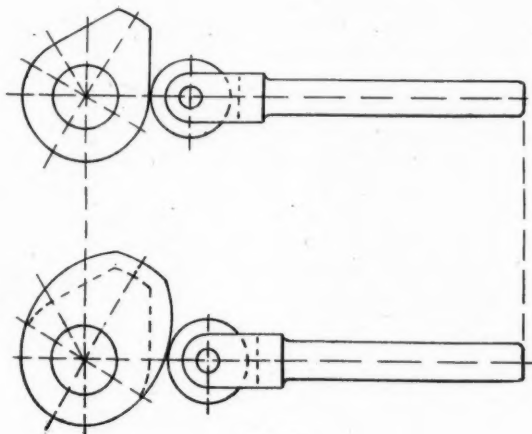


Fig. 5.

terrible racket when used on a high speed motor. The lower cut in Figure 5 shows a method of designing a cam which will run smoothly at high speed without pounding. By simply setting the roller a short distance

further from the cam and giving the high part of the cam as much more throw as the roller is moved away from it, the angle of approachment of the cam is almost cut in two, and an easy movement given to the plunger rod, which operate the valve stem, still working within the same limits as the cam shown in the upper view in Figure 5. A comparison of the two cams is given in the lower cut, showing their respective shapes. It will

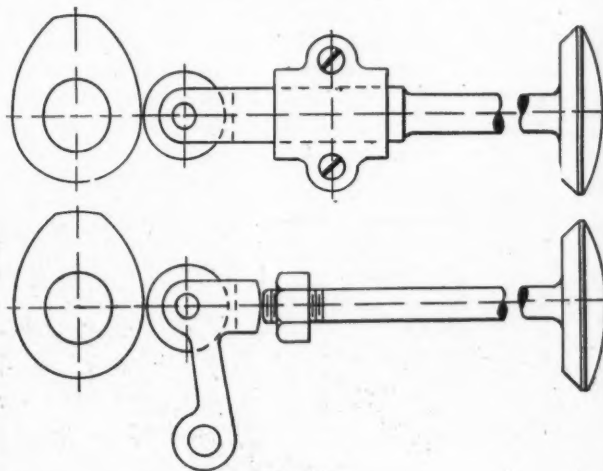


Fig. 6.

be readily seen that they occupy the same relative time with regard to the opening and closing of the valve.

Some types of gasoline motors have valve chambers upon the side of the cylinder below the cylinder head. This generally precludes the use of a plunger rod to actuate the valve stem. The upper view in Figure 6 shows a construction adopted by several makers of this type. The valve stem is extended down to the cam, made square or rectangular in section at that point, and carried in a guide to prevent the roller from getting out of parallel with the cam. This is obviously bad practice and prevents the valve from being free to turn upon its seat, and further, it has to be taken apart when the valve and seat need grinding. The valve should be free to turn so as to present new contact and prolong the life both of the valve and seat. The action of the spring on the valve stem when opening and closing, if the valve stem is free, gives a natural rotative movement.

The lower cut in Figure 6 shows a method of dispensing with a fixed valve stem when no plunger rod can be used. It is very simple and effective in operation.

The officials of New York have decided that no gasoline must be used in or stored upon the premises of automobile stations. Gasoline tanks must be replenished outside and must be emptied before the machine may be taken inside the station. The owner of automobile stations will endeavor to secure a modification of the order.

Emil Oppenheim, general selling agent for the Peugeot Co., is in New York trying to interest American capitalists. He is negotiating with several firms for the sale of the American rights to manufacture the well known machine in this country.

The Renault Transmission Mechanism

Among the operators in Chicago who may be classed among the scorers is one Paul Picard, an enthusiastic Frenchman who went to the trouble and expense of visiting the last great show in Paris for the purpose of selecting a machine for this season's use. He bought a Renault, probably the only sample of that machine in the city and that it has already proved itself one of the fastest, regardless of power, is thor-



Paul Picard and His Renault.

oughly well known to the police of the north side of the city. To those American makers who have not studied them and to owners of the investigating class the following details of the power transmission will doubtless prove interesting.

The transmission gear used on the 8 horsepower Renault has three speeds forward and reverse, but differs from the well known Panhard gear in the method of obtaining the backward motion. It resembles, in many respects, a device whose manufacture has been, or is to be, undertaken by a Buffalo concern. Reference to Fig. 1 will show that the main transmission shaft is of two equal parts, on the forward of which is a male cone, being part of the friction device for placing the clutch in connection with the engine. On the forward end of the shaft mounted on a sliding sleeve are two gears and on the rear piece two other gears, the end of said shaft carrying a bevel pinion which engages with a gear on the differential. Running parallel with the two sections of the main shaft is another carrying four pinions, and on the opposite side of the main shaft is the shifting rod, carrying suitable bearings; its function being to control the speeds which are obtained by the method here described.

When gears A and B are in mesh the transmission of power is in the direction indicated by the arrow, the transmission being from A to B and from C to D, giving the first or low speed. When gears E and G are thrown into mesh the second speed is obtained, power being transmitted through E, G, C and D as shown in Fig. 2. By shifting the sleeve further back gears E and G are released from engagement and the

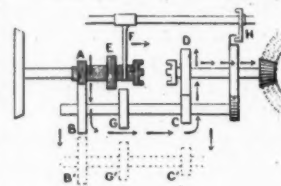


Fig 1

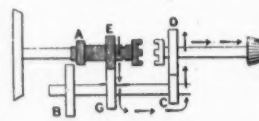


Fig 2

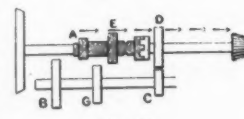


Fig 3

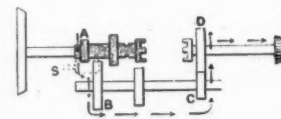


Fig 4

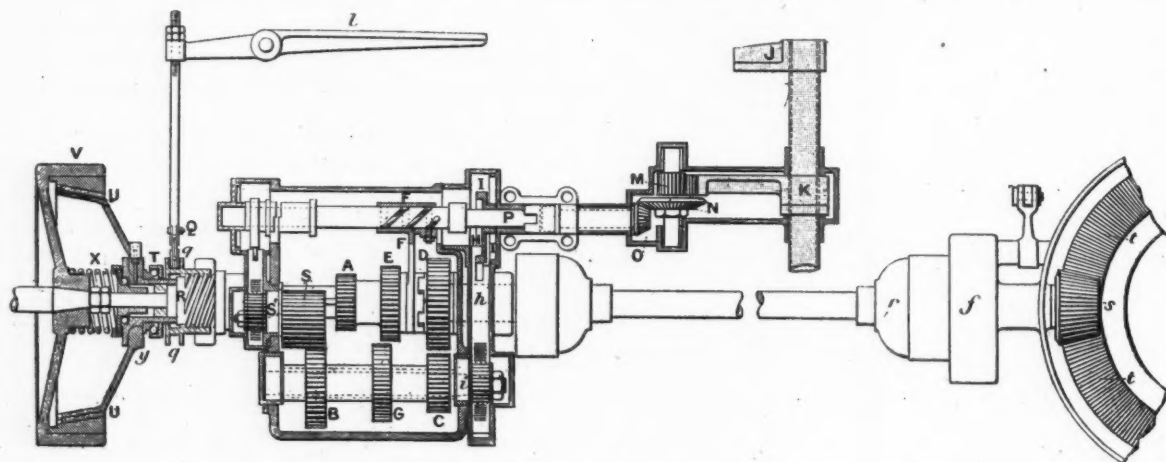


FIG. 5.

clutch composed of the ends of the two sections of the main shaft are locked together, the drive being then direct from the engine as shown in Fig. 3.

The reverse speed is obtained by reversing the movement of the sleeve until it has passed through the low gear as shown in Fig. 4 when a long toothed gear working on an eccentric meshes with gears A and B, as shown in Fig. 4, reversing the direction of movement of the secondary shaft and by means of gears C and D the rear portion of the main shaft. The long toothed gear used for providing the reverse motion is shown more clearly in Fig. 5, as is the shifting lever and mechanism for operating it, said parts being denoted by letters J, K, M, N, O, P. The friction clutch is also shown, its construction, however, being well understood. It will be observed that there are two universal joints, one directly back of the transmission and the other in front of the differential, the casing of the latter carrying a bearing for the tail end of the shaft on which the bevel pinion is mounted.

The method of throwing the reversing gear into operation is certainly well planned from a mechanical standpoint, the operation of all speeds being controlled by one lever. Fig. 5 shows at J K the controlling lever standard, K being a quadrant gear meshing with pinion M which, through bevel gears N and O controls the shaft to which at point F is attached the lever by which the sliding collar carrying gears A and B are operated. The shaft P when rotated so as to reduce the gear beyond the low speed operates, by a further movement of lever J, a spiral gear at F which in turn moves the eccentric carrying gear S, thereby producing the reverse motion. The simplicity of the device in controlling all speeds, forward and reverse, by one lever is interesting and worth attention.

A. C. A. Members are Suspended

New York, May 22.—The Automobile Club of America has made good its threats to its members and its promises to legislators, both state and local, during the recent speed law agitation to punish all violations of the law within its ranks. The governors this afternoon after a hearing suspended Dr. J. Grant Lyman for 6 months and Kenneth A. Skinner for 3 months and admonished E. B. Gallaher. The charge was gross violation of the legal speed limits in the Long Island run. The facts were, of course, undisputed. Dr. Lyman and Mr. Gallaher appeared in person and Mr. Skinner wrote a letter to the board of the same tenor as that in *MOTOR AGE* of the current issue. Mr. Gallaher's defence was that he had exceeded the limit fixed by the judges in making the awards by but 3 minutes.

Bridgeport Club Balks at A. A. A.

The Automobile Club of Bridgeport, Conn., recently elected these officers: President, Dr. C. C. Godfrey; vice-president, Arthur K. L. Watson; secretary, F. W. Bolande; treasurer, Jesse B. Cornwall; consulting engineer, J. N. Bulkley; board of governors, Jonathan God-

frey, Louis Cassier, George W. Hills, W. S. Teel, Jr. It was decided to formally open the automobile season on the morning of May 30, with a parade of the club automobiles and a run to Westport to witness the 100-mile endurance run. Jonathan Godfrey, who is one of the pioneers in automobilism and one of the organizers of the club, stated that he would offer a handsome silver cup as a prize for an endurance run, to be held some time during the season. It was voted to hold the run and that it be in charge of the runs and tours committee. The club had before it an invitation from President Winthrop E. Scarritt, of the American Automobile Association. After debating the matter it was voted to lay it on the table for the present, the conditions of membership being considered too exacting.

Valuable Addition to Automobile Literature

A work of greater importance is "Self Propelled Vehicles," lately published by Theo. Audel & Co., of 63 Fifth avenue, New York. This is a book of 632 pages, splendidly bound, and describing in detail, yet in interesting style, every form of power, and practically every form of vehicle. It is devoted exclusively to the practical side of automobilism and covers that branch with a thoroughness not attained by any other publication we have seen. The work is edited by James E. Homan, A. M., and contains upward of 500 illustrations, and diagrams, "giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity." Its perusal is strongly recommended.

John Jacob Astor, Gentleman

In view of the abuse so freely heaped upon automobilists by the press it would be but fair were some of the papers to repeat the following incident: One day recently Col. John Jacob Astor was driving an automobile on the Port Road, when Mr. Gormand, who was exercising a spirited horse, motioned to him to stop. The dust obscured Mr. Astor's vision and he did not see the signal, and consequently did not stop. After he had passed Mr. Gormand, he noticed that the latter's horse, which had been plunging violently, had dropped in the road. His chauffeur ascertained that the animal had burst a blood vessel and that he was valued at \$300. Col. Astor sent the man with \$300 to Mr. Gormand, with his sincere regrets that the accident had happened. The horse died within twenty-four hours.

Beats the High-Price Record.

New York, May 24.—R. A. Rainey, of this city, in a letter from Paris to his brother W. T. Rainey, says he has bought Baron de Rothschild's 40-horsepower Panhard for \$18,000, which beats the high-price record E. R. Thomas paid Smith & Mabley by a thousand dollars. The car is expected here next week and has been entered in the speed trials. The Rainey brothers are the chief stockholders in the Oldsmobile Co.



There is an extraordinary increase in the number of vehicles seen on the roads about Chicago from week to week and it is evident that a great many of the promised deliveries are materializing. Down at the Automobile Colony, at 14th street and Michigan avenue, all hands are busy. Githens Bros. closed the week with the sale of a Toledo, two Searchmonts and four Waverly electrics, not a bad record for a town so backward in electrics as Chicago is supposed to be. Pardee & Co. have disposed of more Packards than is commonly believed. They contemplate the addition of a line of gasolines of medium-price. The Winton establishment reminds one very much of a "store to rent," being unable to keep anything in stock beyond a demonstrating vehicle. John Palmer, the inventor of the Palmer tire, is among the recent purchasers of Wintons. Dr. Brumbach is another. The Electric Vehicle Co.'s store is now practically complete, and if one may judge from the number of visitors the company has no reason to regret its change of location. The Locomobile Company reports that business is eminently satisfactory in the new location.

NATIONAL COMPANY'S GASOLINE CARRIAGE

The Inland Four-Cylinder Motor Has Been Adopted and First Carriage is Running

Reference has been made, from time to time, to the intention of the National Sewing Machine Co., of Belvidere, Ill., to manufacture gasoline vehicles. Several months ago the Friedman Automobile Co., attracted by the magnificent facilities of the company and its reputation for high-grade work, made a contract with it to build Friedman carriages, and these are now coming through satisfactorily. The company has been experimenting with a view to getting into the automobile business on its account, however, for many months, and wisely concluded that the first question to be solved was that of power.

Some months ago it purchased the patents, patterns, etc., of the four-cylinder engine formerly made by the Inland Mfg. Co., of Chicago, and manufactured three of them in an experimental way. One of these has been mounted in a rig made up for the occasion and without the slightest reference to the probable form of future machines and is now running about Belvidere and surrounding country almost constantly, with a view to giving it a thorough test. The vehicle is

made up largely from the running gear of the Friedman.

So far the engine has proved everything that could be asked of it, has never gone wrong or refused to pull and has developed an abundance of power. A gentleman connected with the company says that it runs with less noise than any gasoline outfit he has seen and develops great power at slow speed. The company will soon erect other vehicles with a view to selecting one from among them to be adopted as the standard type, but realizing the uncertainty as to time which characterizes the entry of a new manufacturer into the automobile business, will not venture to set a time when this selection will be made and the manufacture of a vehicle for the market will be commenced.

"It looks to us," says one of the company's representatives, "as though we had the motor question all solved, but we will not put anything out until we have adopted a handsome rig and are ready to deliver it in good quantities. This will take a little time for we have to build a lot of tools, but it is a safe prophecy, I think, that we shall be heard from before a great many weeks roll over."

MAKES AUTOS IN A PARLOR

Unique Establishment of American Motor Carriage Company—Details of Its Carriage

Cleveland, May 26.—The American Motor Carriage Co. is preparing to market the gasoline vehicle here illustrated. It is fitted with a single cylinder, four cycle motor $4\frac{1}{2}$ inches bore by 6-inch stroke. Speed control is effected by a foot button acting on the throttle and fuel supply. The adjustment of the spark is effected automatically as the speed of the motor increases. The contact points are enclosed from dust and require no adjustment. The transmission gives two speeds forward and one back and is controlled by one handle. The motor will run from 250 to 800 revolutions per minute and at the latter about 25 miles an hour is obtained. The carbureter is Dyke's float feed. It is claimed that there is no back pressure from the muffler, which can be cut out while running. The cooling system pump is geared to the main shaft; the tank, holding about five gallons, being in front with the radiating coils. The gasoline tank holds about $5\frac{1}{2}$ gallons. Lubrication is effected from one tank hold-

ing about a gallon. The engine bearings are supplied automatically, the lubricant passing through the center of the main shaft and the cranks. A small lever at the side of the body opens the switch, at the same time starting lubrication. Current is obtained from eight cells of dry battery, four being used at a time, or if desired the machine will be fitted with a generator ignition device. There is a tool box in the front hood and a box under the seat for packages. The mechanism rests on a steel frame suspended on four semi-elliptic springs. Artillery wheels with Baker bearings and Goodrich 30x3-inch tires are fitted as standard. In starting, the act of inserting the crank opens the compression. The vehicle is of neat design and weighs 1,000 pounds. It sells at \$1,000.

The American Motor Carriage Co. is located in one of the most unique establishments in the country. It is situated on East Prospect street in the center of the best residence district, well situated for repair business, storing and charging, and consists of a large house with factory building in the rear. The establishment was built several years ago by an interior decorating company and the house was fitted with samples of the decorator's art. Every room is finished in some kind of valuable hard wood and the decorations are of the most expensive order. In the center of the house there is a large show room, with smaller salesrooms opening off from it. The automobile company is using some of the rooms for its offices, while others will be fitted up as lounging rooms for patrons. The third floor is utilized as a designing room. One wing of the factory is being used in the manufacture

of electric storage batteries. The company expects to bring out a line of electric vehicles. The factory has been well fitted with modern machinery, and, with the addition of still more which has been ordered, the output will be quite considerable. It is the intention later to erect a large factory building on the present site.

The company was recently organized with the following officers: George F. McKay, president; F. D. Dorman, vice president and general manager; J. T. Morris, secretary treasurer; George W. Dunham, engineer and George H. Wadsworth, superintendent. Capital stock \$100,000.

DEVELOPMENTS IN OHIO TRADE

New Peerless Agents—Goodyear Capital Increased—Tire Makers Outwit Alphonzo

The Peerless Mfg. Co. is pushing exclusively the 16 horsepower touring car exhibited at recent shows. The company is securing more business than it can take care of and special parts are being built to order by other factories. The company has recently contracted with the following to act as its agents: Frederick E. Randall, Boston; the Lovell Company, Pasadena, Cal.; Canada Cycle & Motor Co., Ltd., Toronto; Elliott Evans, Buffalo.—The Woodruff Automobile Co. has established a factory in Cleveland and is now prepared to market a gasoline runabout.—The Goodyear Tire & Rubber Co., of Akron, has increased its capital stock from \$200,000 to \$1,000,000 and will make additions to its factory.—F. X. Frantz, heretofore at the head of



AMERICAN MOTOR CARRIAGE CO.'S VEHICLE.

the Frantz Body Mfg. Co., of Akron, has been a strong factor in the organizing of the Sandusky Automobile Mfg. Co., of Sandusky. The company has secured the backing of strong business men of that city and is already preparing to manufacture vehicles in temporary factory quarters.—The Colonial Rubber Co., of Akron, has been organized to handle Swinehart tires in European countries other than England. The tires are made in this country, are shipped to France and from thence are distributed to Spain, where there is a strong demand. In this way they avoid the almost prohibitive duty against American products in Spain. Swinehart tires were recently purchased for two automobiles made in France for the Shah of Persia and the company is in receipt of a number of orders for 3½-inch tires to be placed on French army ambulances for service in Tonquin, China.

New York Trade in Brief

New York, May 24.—The Rainier Equipment Co., 393 Broadway, selling agent for the Vehicle Equipment Co., 35 Nassau street, reports a rush of orders for electric trucks and delivery wagons.—Sidney Bowman, of the Bowman Automobile Co., 52 West Forty-third street, has taken the agency for the Buffalo gasoline runabout.—Three Georges Richards—a limousine, a double phaeton, and a tonneau—have arrived, consigned to the General Motor Car Co., 239 West Fiftieth street. They were on exhibition at the recent British show at Agricultural Hall, London.—R. M. Owen, manager of the Oldsmobile Co., left for the factory at Detroit yesterday in the hope of securing an early delivery of 150 Olds runabouts.—The uptown agency for Thomas B. Jeffery & Co.'s gasoline Ramblers has been given to W. H. Webster, 10 West Sixtieth street.—The United States Long Distance Co., 108-112 West 41st street, has gotten out a new 12-horsepower, tonneau-bodied, two-cylinder, 1,600-pound, four-passenger vehicle. A new type of the standard vehicle, which will be on view in a day or two, is to be sold for \$1,200. It has two feet longer wheel base, three speeds and reverse, wheel-steerer, mechanically operated valves, both seating vertically, and drive pump with spiral gear. It has a sloping front and back and five inches wider seat.—The Steam Vehicle Co. of America, whose headquarters are at Sidney B. Bowman's station, on West Forty-third street, besides manufacturing the Reading steam wagon, is the American representative of the Astor foreign vehicles.—The Banker Brothers Co., agent for Peerless and Pierce automobiles, now

on West Eightieth street, will move to a station of its own in Forty-third street, about June 1.

Malden Automobile Company's Steam Carriage

The vehicle here illustrated is manufactured by the Malden (Mass.) Automobile Co. Among the features claimed for it are that it can be run 200 miles with one filling of gasoline and 35 miles with one filling of water. The fire is controlled from the seat and only one quart of gasoline is under pressure at a time. The boiler has a fusible plug and is controlled automatically. The carriage has the latest tank-filling devices so that, if a source of supply is available, the operator need not leave his seat. The company announces that it will guarantee the carriage for a year.

FEATURE OF THE DAVIS ODOMETER

Bell at Every Mile and Index Registering Every Forty-four Yards Makes Speed Gauge Easy

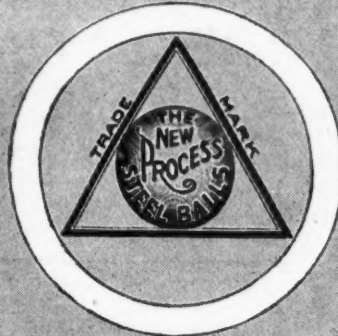
The Davis odometer, which has been on the market for several years, has a unique feature in the small bell which forms part of its mechanism. It rings at every mile so that in calculation with a watch in the vehicle the odometer practically becomes a speedometer. The dial of the device contains three indexes, each of a different color. The red index registers a mile every time it makes a complete revolution, and, as the dial is divided into forty spaces, each space represents the fortieth of a mile, or eight rods. The yellow index revolves once every 40 miles, and each space represents a mile. The blue index revolves once every 1,600 miles,



THE MALDEN STEAM CARRIAGE.

HIGH DUTY STEEL BALLS

ACCURATE
TO 1-10000
OF AN INCH



EXACTLY
SUITED FOR
AUTOMOBILES

WE MAKE OVER 500,000 BALLS EACH DAY

AUTOMOBILE AND CYCLE PARTS COMPANY
BALL AND PEDAL FACTORY
Cleveland - - Ohio

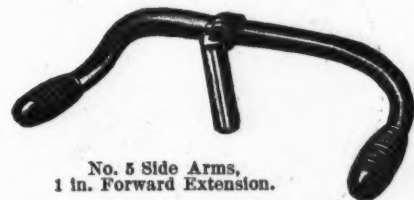
1902
Kelly Adjustable

Handle Bars

STANDARD BARS OF THE WORLD



No. 3 Arms, Regular Stem.



No. 5 Side Arms,
1 in. Forward Extension.



No. 4 Racing Arms,
2 1/4 in. Forward Extension.

It will pay all manufacturers these times when competition is hot, to see that their wheels are equipped with just the attachments demanded by the rider. Every rider knows the merits of KELLY BARS, as they have been for the past six years the most popular and foremost sundry in the cycle trade.

THE KELLY HANDLE BAR CO.

CLEVELAND, OHIO, - - - - U. S. A.

**SECURITY
ECONOMY
DURABILITY
EFFICIENCY
SIMPLICITY**

There are many other Unexcelled Features embodied in

MUNGER

Non-Collapsible Pneumatic Tires

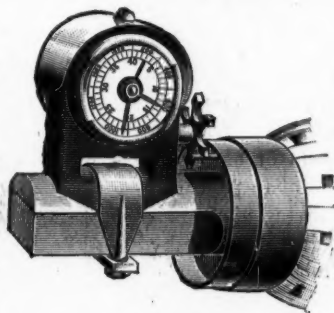


OUR CATALOG TELLS THE WHOLE STORY.

**MUNGER AUTOMOBILE TIRE CO.
TRENTON, N. J.**

so that each space represents 40 miles in relation to this index.

The figures inside the ring indicate miles, measured by the yellow index, while the figures outside the ring indicate miles, measured by the blue index. The dial thus constitutes a reliable record of the distance travelled. On starting out, the position of the indexes may be quickly marked on a dial card—a number of which are furnished free with each odometer—and on returning from a drive the distance traveled may be seen at a glance. The odometer is sold by the S. H. Davis Mfg. Co., of 31 to 35 Sudbury street, Boston.



The Davis Odometer.

Pennsylvania Electric Vehicle Company Suffers from Fire

On Wednesday of last week a fire occurred in the building owned and occupied by the Pennsylvania Electric Vehicle Co., Philadelphia. The first and second floors contained seventy or more automobiles, of which those on the first floor were got out safely, while twenty-five which were stored or in process of repair—on the second floor had to be abandoned, as the electric power which ran the elevator, was shut off. These, however, were only damaged by water and smoke. Two of them, it is said, belong to George D. Widener, and are valued at \$10,000. Theodore B. Entz, superintendent of the Electric Vehicle Co., roughly estimated its loss on the stock and building at \$50,000. The insurance, placed through Johnson & Higgins, is \$48,500 on the building, the same amount on the contents and \$8,000 on the dynamos and machinery.

Makes Boilers and Will Buy Parts

The University Automobile & Boiler Co., of the Fremont Building, Boston, is marketing a water tube boiler and incidentally selling stock in the company at a nominal figure. The boiler has a removable outside shell and a number of straight tubes running in alternate layers at right angles. In its prospectus the company says: "It is not the purpose of this company to engage in the manufacture of auto-vehicles in a general way, but rather to purchase the various parts of those who make a specialty of their manufacture and with the advantages accruing from the possession of our boiler and other patents, to assemble those parts at our factory, after our own designs, thereby producing a thoroughly up-to-date machine, and at a price that will defy competition."

New Incorporations and Industries

BUFFALO, N. Y.—Centaur Motor Vehicle Co., for manufacturing, purchasing or otherwise acquiring or selling automo-

biles, vehicles, parts, etc.; capital stock, \$100,000, of which amount \$500 has been subscribed and \$50 paid in. Incorporators: E. B. Fraser, W. F. Emerson, J. B. Eccleston and M. F. Barrett, of Buffalo, and H. C. Wilcox, of Bradford, Pa.

ELIZABETH, N. J.—Curtis Machine Co.; principal office, 10 West Grand street; object, manufacturing automobiles; capital, \$10,000. Incorporators: Ira M. Curtis, George L. Tryon and Walter E. Hedley, all of Elizabeth, N. J.

LOS ANGELES, CAL.—R. H. Phillips has purchased 70x230 feet on San Pedro street, running through the block to San Julian street, unimproved, for \$7,000, and will erect on the property a three-story brick building, which will be used as an automobile factory and will involve an expenditure of between \$200,000 and \$300,000. No subsidy or bonus is to be asked in connection with this enterprise.

Moore's Goods Are in Great Demand

Brandenburg Bros. & Alliger are doing wonders with the product of the C. J. Moore Mfg. Co. Mr. Alliger is at present on the road and has sold Moore parts to practically every house making or contemplating the manufacture of automobiles. Among late customers are A. L. Moore, of Cleveland, the Centaur company, recently organized at Buffalo, and the Day Mfg. Co., which manufactures bicycles at Lake View, N. Y. The increase in the Moore company's business has been such that additional room has been found necessary and it has therefore secured another floor for a wood-working department and given employment to a large number of additional hands.

Sundry Trade Information.

The Overman Automobile Co. has completed a gasoline machine for A. L. Riker, and it is understood that it will be seen in the mile trials on Staten Island next Saturday. It has been given a thorough test on the road about Springfield, Mass. Power is supplied by vertical four-cylinder engine.

The factory at Belvidere, Ill., is now turning out Friedman automobiles rapidly and deliveries can be made in from ten to fifteen days.

George Cannon, a student at the Lawrence Scientific School at Harvard, has built a racing machine by mounting a large boiler and an engine on wire wheels, the engine being directly connected with the rear axle by sprockets of equal size. If the boiler is capable of doing business as its builder expects, there will be something doing when the machine is set in operation.

C. R. Apple, eastern manager of the Dayton Electrical Mfg. Co., who is located in the manufacturers' exhibition in the Bourse building, Philadelphia, is making an attractive display of his company's products, the Apple igniters. The company has some interesting printed matter on ignition troubles, which it will send to those interested.

At the next meeting of the executive committee of the manufacturers' association the principal matter to be considered is the guarantee. Mr. Unwin, the assistant secretary, has been in correspondence with all the members who make complete vehicles, and reports that all who have applied favor the adoption of a form submitted, which provides for a guarantee for 60 days, exclusive of tires and batteries.

The Candidate of The Self-Moving Automobile League

BY ADOLAR BUNGLESKATE

The prospective automobile speed trials, to be held on Staten Island, have brought about a condition among the rustic population there which, though highly significant of its progressiveness, yet augurs badly for the crops there the present year. In fact, the collective energies of the population seems to have been averted from their usual pursuits and directed indirectly upon the coming automobile event, and more directly to the spacious barnyard of Squire Cy Hayrick, the venerable leader at public affairs on the island.

Indeed, the activity and studiousness of old and young, the assiduousness of purpose, from the smallest boy to the most rheumatic old holder of a reserved seat in the corner grocery, has been for weeks fast concentrated upon that barnyard. It is an enthusiasm almost appalling for a confirmed city man, like myself, who like, I dare say, most of my own kind, has given our American bucolic but little credit for progressiveness in affairs automobilic.

Until a week ago the yard has been the object of ceaseless visits by the farmers for miles around, who have made it the depositing ground of hundreds of pounds of plowing machinery of a somewhat defunct caliber. Night and day the gay sound of the hammer, the merry squirm of the drill and the glad pinch of the tongs have been wafted upon the breeze from Cedarsquash, the seat of the squire.

And now the giant work is ended, the "Pesky Fright,"



Staten Island's representative in the coming trials, the official craft of the "Cedarsquash Self-Moving Automobile League" stands ready to combat for the championship. Very deservedly the squire was some time ago elected the head of the league and he graciously consented to let me take a snap shot of him clad in the dignified paraphernalia of his office.

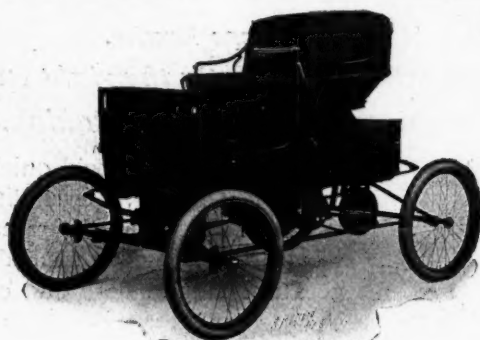
But to return to the ingenious machine, the "pesky freight." The picture taken on the snap reveals for the most casual observer the conspicuous absence of all "fancy frills" that so encumber the product of professional builders. The good, sensible use of material usually allowed to go to market, is equally evident—in fact, talented architects have thus succeeded in producing a monument of beauty at an incredibly small cost.

Not flip nor showy, not gaudy nor yet uncanny—it is moderately endowed with black paint as far as the material would go, for the rest allowed to stand in its pristine beauty; almost "squat" its sweeping, broad outlines denotes solid, immovable stability. Note the simple steering device, the last thing perhaps that one of our modern experts would have hit upon—so simple as to be almost foolish. Again note the graceful upward sweep of its smokestack, the upper end of which is unfortunately obscured by a careless hen. (An egg dropped from that position would, beyond a doubt, be precipitated into the firebox, where it would almost certainly be smashed. We will hope for the repose of Mrs. Squire that the industrious fowl has no such intention.) The stately vehicle is certainly calculated to justify the most sanguine hopes of the club it will represent and likewise to strike terror into the hearts of the co-contestants when it will swoop to the scratch at the fateful day.

I presage a glorious future for that enterprising organization and Staten Island as the coming center for things automobilic.



THE ORIENT RUNABOUT



MODEL 1902.

8 H. P.

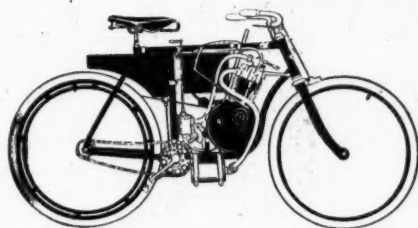
PRICE, \$875.

Powerful, Practical and Reliable.

All ordinary hills can be ridden on the high speed without the use of gearing. Speed controlled from 4 to 25 miles per hour, simply by pressure of toe on the throttle. Will climb 25 per cent. grade with two persons. :: :: :: :: :: :: ::

Write for Catalogue. ✂ ✂ Agents Wanted.

WALTHAM MFG. CO.,
WALTHAM, MASS.



ORIENT MOTOR BICYCLE

PRICE Fitted with the New Orient 3 H. P. Motor.
\$250.00 Speed over 40 miles per hour.

The Most Powerful Motor Bicycle in the World.

Write for particulars. Agents wanted.

WALTHAM MFG. CO.,
WALTHAM, MASS.

THE STANDARD ACETYLENE LAMPS FOR VEHICLES

OF ALL SORTS FOR YEARS HAVE BEEN

SOLAR



LAMPS

From the time of the introduction of Acetylene Gas there has been only one lamp that would stand every test—The Solar. :: The acme of Solar perfection is the new French Auto Headlight illustrated here. Our catalogue tells all about Solar Lamps of all kinds. SEND FOR IT

BADGER BRASS MFG. CO., Kenosha, Wis.

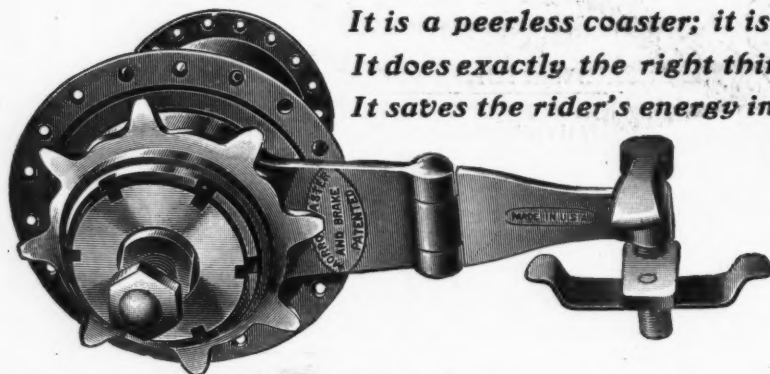
THE SUPERIORITY OF THE MORROW

Rests Not in One Feature, But in the Complete Whole.

It is a peerless coaster; it is a peerless brake.

It does exactly the right thing in exactly the right way.

It saves the rider's energy in coasting or in braking.



As a brake it takes hold quickly but not violently; the slightest application retards the wheel's momentum and once applied, it does not require hard and continuous and energy-consuming back-peddalling pressure to keep it applied. It does not depend

on the heat generated by the friction of metal against metal for its effective operation.

The Morrow

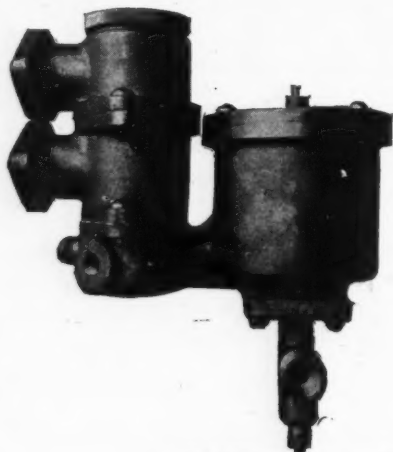
is the result not of a few months' limited experience but of several years' use in all parts of the world by all kinds and conditions of men. It is no experiment.

ECLIPSE MANUFACTURING CO.,

ELMIRA, NEW YORK.

ASK "DASEY" IF IN NEED OF PARTS.

\$12.50 ...FOR THE NEW WILCOX... FLOAT FEED CARBURETER



You will notice **there are no levers** for governing, hence no confounding the operator—no waste of time in looking for trouble in the carbureter when none can exist. It's a time saver, a labor saver, and what is more important still—a money saver.

When once regulated for a given size Engine it is settled for all time to come.

Our price is right. If you can use them in quantities and are looking for the **best obtainable** our manufacturers' prices will astonish you. :: :: :: Dasey Porcelain Spark Plugs, 1/4-inch size—the kind that work all the time—no short circuit here, \$1.75 each.

GET WHOLESALE QUOTATIONS.

THE P. J. DASEY CO.

19-21 La Salle St.,

CHICAGO, ILL., U. S. A.



THE CYCLE AGE

A shining example of the success of cycle racing from the business standpoint of the promoter and manager lies in the prosperity of the Vailsburg, N. J., track under the

management of Fred W. Voigt. The methods of your real showman, of your up-to-date caterer to the public's amusement, have characterized Mr. Voigt's conduct of probably today the most universally successful cycle racing track in the world from his assumption of its direction three years ago. At that time the Vailsburg, the little quarter-mile board track, had a black eye and had been a horrible example of the failure of cycling racing in Newark.

Voigt started its renaissance full of confidence in the future of cycle racing when liberally and judiciously promoted. Of course he had the advantage of racing on Sunday, but even with that in his favor the crowds at first were but a little over a thousand. He persevered and gave good, but not extravagant-priced racing. He believed in printer's ink. Soon the trolleys and the shop windows bloomed with his race meet cards. This was backed by personal attention to newspaper booming. Voigt was a newspaper man and knew that the proper attention of the press to racing meant its success. He wrote each week special stories of the coming meets and wrote them at the newspaper editorial offices, that each sporting editor might see he had an original story. Voigt continues this practice now and his discussion of the coming races, criticisms of the handicaps and his forecasts of the coming contests keep alive the interest in the game and keep Newark too cycle racing crazy.

Not only was Voigt a newspaper man, but he was a sports promoter in other lines. He gave as great care to internal economic thoroughness as to outside booming. He put up liberal prizes and secured the best talent, but he saw that he got a run for his money. His programmes are carefully arranged, novel features are introduced and every effort is made to make the most of the events on the card from the showman's standpoint.

Four thousand is a rain or shine attendance at Vailsburg. That number has actually sat on the stand and bleachers more than one Sunday waiting for the rain to stop, for the rule of the track is that races shall be run if they can be by any possibility. On extra days the attendance frequently reaches 7,000. The average is over 5,000, without dispute.

Now the Vailsburg manager has added the New Haven Coliseum to his race promoting business, and using the same methods as at Newark, he will doubtless repeat his New Jersey success and make the Elm City circuit the banner track of New England. Already he is arranging for transportation by the steamboat, so that at a small price the metropolitan district amateurs and the Vailsburg professionals can go from New York to New Haven by the Tuesday afternoon steamer and return by the boat that night.

Much of the success of Voigt's business management



lies in the efficiency of his lieutenants—"Eddie" Voigt at the trackside and "Sol" Du Vries at the gate and in the advance work. Voigt's brother, under the new plan, will be resident manager at Vailsburg and Du Vries will fill a similar position at New Haven. Fred W. Voigt will be general manager of both tracks.

This rather extended history of the Vailsburg successful management is given, not only as a just tribute to most notably successful promotion of cycle racing, but also to prove how great a paying investment the game can be made when conducted intelligently, liberally and on business principles.

L. A. W.'s TWENTY-THIRD ANNUAL

Committees Appointed for the Coming Great Meet at Atlantic City

Philadelphia, Pa., May 26.—Preparations for the twenty-third national meet of the League of American Wheelmen, which is scheduled for Atlantic City, July 16, 17, 18 and 19, are progressing rapidly, and

long before the week of the meet the executive committee hopes to have the bulk of the arrangements completed. Chairman Allen, of the tours and runs committee, has appointed as assistants Samuel Eaton, J. H. McGrath, "Jack" George and William Ennis, all of whom are well known in Philadelphia. The committee will be still further strengthened by the appointment of the captains of all the organizations composing the Associated Cycling Clubs of Philadelphia, which is taking an active part in the management of the meet. Should the big New York-Atlantic City run materialize—and present advices seem to indicate that it will—an auxiliary committee of Gothamites will also be appointed.

J. C. W. Parsons, No. 1003 Atlantic avenue, Atlantic City, N. J., has been appointed chairman of the hotel and accommodations committee. Within a week or ten days Chairman Parsons will have prepared a list of hostleries, giving location, rates, etc., and will furnish information concerning same to any league member who incloses return postage.

The preparatory training now in progress daily on the new Coliseum track indicates that those who attend the Atlantic City meet will witness some of the deepest cuts ever made into world's cycling records. From all accounts the new oval is a wonder, and the riders who are getting in shape at the City-by-the-Sea predict that by the close of the season the new track will have placed to its credit all records worth having from one to fifty miles. It is the present intention of the track managers to confine the racing during the L. A. W. meet to night events, although several races may be put on in the afternoon if there is a popular demand for them. The night races will probably be made up of one or more national circuit programmes, in addition to middle-distance races between the best American and foreign pace-followers.

The executive committee will hold a meeting at its headquarters, No. 639 Bourse building, Philadelphia, early in the present week to outline the complete programme for the four days of the meet.

SEEN THROUGH FOREIGN SPECTACLES

Enthusiasts from Brussels See Linton's Great Ride and Tell Humorously of Their Experience

Paris, May 15.—What a lucky fellow I am. On Friday I received a telegram from Paris to come there at once and came here on the following morning. Oh, what an awful ride I had. Last year I enjoyed a fine automobile drive, but this time I had to take one of these dirty, pesty, old Belgian "Pulmannit"—forget it—cars. Sunday afternoon, after looking grey and threatening for many hours his majesty the sky cleared up and thousands and thousands, surely about 15,000 eager looking cycle record fighting people invaded the lovely Princes track. And did they get their money's worth? I guess, and times over, for as to myself I do not remember having seen such splendid races for

many years. I expected Elkes to win, and possibly Robl, but did not believe that Tom Linton would prove himself such a marvelous "gone" new comer. Bravo, Tom, I bow to your superiority, and the pleasure is the greater as I did not expect it.

Four stayers, the pink of the European contingent: Robl, the German; Linton, the Briton; Taylor, the Frenchman, and Dickentmann, the Dutchman, with Harry Elkes, of "over there" lined up. And before the noise of the "bang" was dispersed, the riders were almost out of sight running after what cannot be caught; they empty space, running after something that we do not see, as the Frenchman says. Elkes caught his tandem first and in less than half a lap had gained 30 meters. He covered the 2 kilometers in 2:01 3-5, breaking the former record by two-fifths seconds. This will give an idea of what was to follow.

But Tom, whose motor bicycle did not quite behave at first, was now "all in it" and going like a thief with a policeman who can run at his heels. Before another two minutes had passed he was next to Elkes and in another second ahead of him. Poor Elkes was then without pace,

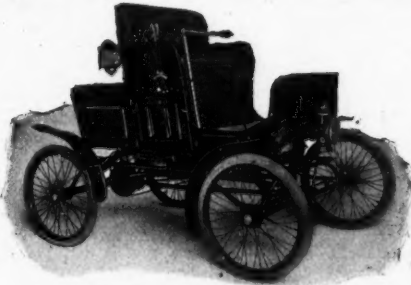


Linton and Bouhours.

his tandem having a stop and the other one refusing to start. Robl thus had the opportunity to pass his American friend and urging his pacemakers was going like a man "who is feeling well" and tried to get a hold of Linton's back wheel. And with splendid courage he succeeded in making up the lost ground and catching on to the Englishman. For a few moments I was like deaf, not mute; such howling, yelling, enthusiasm is quite undescrivable. Well, for two laps, or nearly $\frac{3}{4}$ mile, German and Englishman rode side by side, going these two laps fully at 48 miles an hour. Finally Tom got the best and Robl took second position.

During that time Elkes was going alone, unpaced but just as firmly and madly as ever. He certainly showed again his pluck, his will, and what he can do with the proper help. Suddenly, to add to the excitement of the race one of Robl's tires slowly punctured and he was compelled to change machines and in the same time lose two laps. This happened before the first half hour was over, during which Linton covered nearly 22 miles 1,265 yards. A few minutes after another incident occurred, this one turning out in a miraculous manner. The tire of Dickentmann's tandem got off the rim and the steerer could not control the machine, which went clear up into the fence. Dickentmann, in trying to avoid the fall, slipped over on the grass, but right there one of the "garden de paix," or policemen, was standing and the Dutch rider landed on him before reaching the ground. The poor official was badly wounded and had to

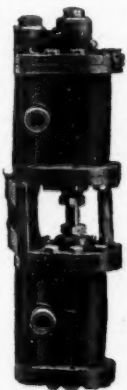
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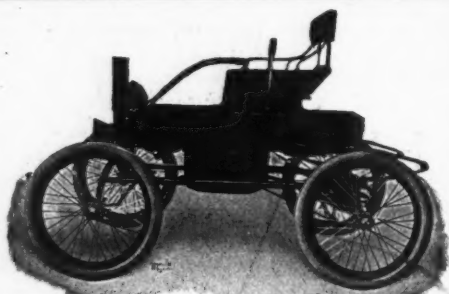
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be taken to the nearest hospital, while the rider and his tandem mates came out of the event with but little scratches. And the rest of the bunch was following at about 150 meters. They all passed through the machines, riders and "rubberers," slowing up very little, but quite a bit scared.

Nothing exciting happened further and Linton slowed up, being far ahead of the records and sure of first money. In the hour he covered the pretty little stretch of 44 miles 1,100 yards. Robl was one and a half laps behind and Elkes third.

Another event which was real interesting was the scratch race with Lawson, Ellegaard, Rutt, etc. The American won his heat from Jenkins and six others, quite easily. Ellegaard, Rutt, Momo and Domain were the other winners of heats. In the final Lawson simply did not exist and came in last. The Dane won the race by inches from Rutt, who rode a grand race and will certainly get some big money before the season is over. Domain beat Momo for third place.

A few of the new records: 5 kilometers, Elkes, 4:31 4-5; 10 kilometers, Linton, 8:36 4-5; 20 kilometers, Linton, 16:43 4-5; 50 kilometers, Linton, 41:10 3-5; 10 miles, Linton, 13:36; 20 miles, Linton, 26:25 2-5; 30 miles, Linton, 35:05 1-5; 40 miles, Linton, 53:30 4-5.

The announcement being made that on the following Tuesday, May 13, another one hour race between Elkes, Robl, Linton, would take place, I telegraphed my house as follows: "Linton won, breaking record. He, Elkes and Robl will ride Tuesday. Would like to see race. Can I stay?" I received the following reply from the chief: "Wait until I come."

"Wait until I come." That made me laugh. There is a man well over forty, still as crazy over a good race—it must be a real good one—as when he was twenty. Were you to cable him from Chicago that something extraordinary will happen in the city of "the ham and the eggs" I would be willing to bet that he might go across. Well, you ought to have seen him. He did not have a drink except two bot-



Jacquelin Defeating Lawson.

ties of white wine and a half of red, yet he was so enthusiastically delirious, that many people thought he had what you call a "jake."

The race was to start at 6 p. m., but thousands of people were there hours before. You know it was free for everybody and I assure you there was a full crop everywhere. As soon as the start was given the men begun to ride like—I don't know. Anyhow, when the 5 kilometer mark was reached Linton had broken the record and was leading by about 40 meters; Elkes was nearly 300 meters

behind without pace. Again and again Robl would make up the gap, but the English rider would not let it rest and jumped away just when the German would have closed up on him. And so it went on until the sixtieth kilometer, when Linton was 33 seconds ahead of the record. Then the little English rider's only motor bicycle had a breakage and it was all off. Robl went to the front, and encouraged by the crowd, soon came within record time. He went on and broke all records until the end. In one hour he covered the enormous distance of nearly 45 miles 185 yards. Linton was many kilometers behind and Elkes last.

Again I must speak a word in favor of the American boy, who has had the worst series of accidents a rider ever had. The public was well aware of it and did not fail to encourage him and show its kindness.

And when the meet was over, my companion tapped me on the shoulder and said: "Shall we stay for next Sunday? There is going to be another fine one." "No; never take too much of a good thing; after all you might get to dislike it," I said. "That's right, we had better take a 'Pulmanit' back to Brussels, even tonight." So we are going home, satisfied of having seen, he one, I two, of the most memorable races ever held on any track.

And now will you be good? I nearly wrote you a book. Could you do the same about a meeting in Chicago?

Major Taylor Wins Two Matches

The major rode a match against Meyers at Maestricht on the 13th and won, but not without having to put up a strong effort, for the Dutchman was defeated by inches only in two heats. The second heat had to be run twice as the major almost ran Meyers off the track in the last lap by turning too closely. Taylor's second success was at Arras, France, where he defeated Grogna and Bourotte in a three cornered match in three straight heats.

Leander Beats Fenn in Motor-Paced Races

Baltimore, May 22.—George Leander tonight easily defeated Willie Fenn in two ten-mile motor-paced races at the National Coliseum here. Fenn rode a hard, plucky race, but was outclassed. The first mile of the first heat was ridden in 1 minute 27 4-5 seconds, which is the fastest that was ever ridden in a competition on the local bowl. Leander won the first heat by seven-eighths of a lap in 15 minutes 44 2-5 seconds and won the second heat by three-quarters of a lap in 15 minutes 42 3-5 seconds.

Zimmy Shines as a Motor Pacer

Washington, May 21.—The ten-mile motor-paced race at the Coliseum track tonight, between H. B. Freeman and W. S. Fenn was won by the former. The match was for the best two out of three, and was won in two straight heats. The time for the first heat was 15 minutes 38 seconds, and for the second heat 15 minutes 26 seconds, which is considered good time. The winner's motor was ridden by Arthur Zimmerman and George Turville.

Voigt Seeks New Tracks to Conquer

New Haven, Conn., May 22.—Fred W. Voigt, also manager of the Vailsburg track, opened the Coliseum, now controlled by him, tonight to crowded stand and bleachers. Amateur and professional races will be run

every Sunday night. It is said that Mr. Voigt is endeavoring to secure control of the Springfield and Worcester tracks to add to his circuit.

ELKES HAS NEW EXPERIENCE

Comes Home Without a Victory to His Credit—French Rider Accompanies Him

New York, May 25.—Two notable pace followers arrived in the Fuerst Bismarck today: Harry Elkes, American champion, and Basil de Guichard, amateur champion of France. They left at once for Boston. They will race against one another on Decoration Day, in the afternoon at Charles River Park and in the evening at the Providence Coliseum.

Guichard's father accompanied him. The son is a handsome little fellow and likely to become popular here. The fact that he is American born prevented his representing France in the international races last year. He was born in Denver, Col., during a visit of his parents to this country and taken to France at the age of 5 months. He has always worn the American flag in his races in compliment to the land of his birth. He speaks English fluently, having resided for some time in England.

Elkes rode three races while abroad and failed to win any one of them. In one he fell and in the other two he had trouble with his pace.

HURLEY AGAIN IN FORM

Splendid Ride at Vailsburg Under Adverse Conditions Shows Old-Time Speed

Newark, N. J., May 25.—Rain interrupted the races at Vailsburg this afternoon after the novice and the half mile professional open trial heats had been run. The shower came on while the half mile amateur handicap trials were being run off. Two of them only were finished. Harry Welsing, N. Y. A. C., and Edwin Forrest, K. C. W., won those completed, each from the 10-yard mark, in 1:06 4-5 and 1:01 respectively.

Marcus Hurley, the amateur champion, made his first metropolitan appearance this season in the third heat, starting, of course, from scratch. As the pistol fired the clouds again burst and the rain came down in torrents, making the going on the banks very slippery and treacherous. Hurley caught the field in a jiffy and led at the bell. He won as he pleased by 20 yards in 59 1-5, as against his own world's record of 58 seconds, made on this track. Conditions considered, it was a great ride and seems to indicate that Hurley has amateur records and races again at his mercy this season.

In the professional trial heats, Collett, Kramer, Fisher and John Bedell won and Floyd Krebs, Cadwell, Newkirk and Bardgett ran second.

Fourth of July Races in Chicago

Arrangements for the Fourth of July race meet at Garfield Park track, under the management of the

Congress Cycling Club, are progressing satisfactorily. Two of the members recently took in hand the solicitation of prizes for the track as it is a public affair and no admission fee can be charged. The dealers and makers have shown a disposition, for the first time in four or five years, to respond to the efforts of the club to boom the sport and incidentally the sale of machines, and it appears that there will be no lack of prizes. Among them will be a cup presented by this paper. A week after the event there is to be an old-time run north of the city. Mayor Harrison, among others, has promised to participate.

Hygienic Wheel Company Sues Bretz

The Hygienic Wheel Co., of the St. Paul building, New York, owner of the Hygienic frame patents, has commenced suit against the Bretz Mfg. Co., of Syracuse, for infringement. The case dates back a long time and it is understood that the owners of the patents have made all reasonable endeavors to bring about a settlement, but without effect. The company long ago made it plain that it would defend its rights in a device which has been of greater advantage to the industry than any other device of late days, except the pneumatic tire and the coaster brake.

Cycles and Autos Gone Abroad

Washington, D. C., May 22.—The figures showing the exports of bicycles and parts for the week just ended from New York are as follows:

Antwerp—Bicycle material, six cases, \$372; bicycles, forty-four cases, \$690.
 Argentine Republic—Bicycles, one crate, \$116.
 Amsterdam—Bicycles, seventy-six cases, \$2,250.
 Bergen—Bicycles, one case, \$78; bicycle material, one package, \$15.
 Brazil—Bicycles, one case, \$17; velocipedes, 4 cases, \$85.
 British Australia—Velocipedes, 37 packages, \$383; bicycles and material, 226 packages, \$6,362.
 Bremen—Bicycles, one case, \$50.
 British East Indies—Bicycles, 193 packages, \$3,504; velocipedes, seventy-six packages, \$150; bicycle material, thirteen cases, \$419.
 British West Indies—Velocipedes, one case, \$20; bicycles, forty-seven cases, \$1,380.
 Copenhagen—Bicycles, twenty-four packages, \$470; bicycle material, four packages, \$185.
 Cuba—Bicycle material, two cases, \$200.
 Egypt—Bicycle material, three cases, \$75.
 Frankfurt—Bicycle material, one case, \$225.
 Florence—Bicycles, thirty-two cases, \$708.
 Gothenburg—Bicycles and material, three packages, \$188.
 Genoa—Bicycles and material, twenty-one cases, \$873; cycle machine, one case, \$50.
 Hamburg—Bicycles, 151 packages, \$4,205; bicycle material, thirty-eight packages, \$2,344.
 Helsingfors—Bicycles, twenty-four cases, \$800.
 Havre—Bicycle material, eighty-two cases, \$4,966; bicycles, seventy-four cases, \$700.
 London—Bicycles, nine packages, \$568; bicycle material, seventy-one packages, \$3,678.
 Liverpool—Bicycles, 178 packages, \$4,604; bicycle material, twenty-three packages, \$918.
 Lisbon—Bicycles, seven packages, \$260.
 Mexico—Velocipedes, three cases, \$33.
 Paisley—Bicycle material, two cases, \$92.
 Peru—Velocipedes, one case, \$40.
 Rotterdam—Bicycle material, fourteen packages, \$400.
 Southampton—Bicycles, one case, \$45; bicycle material, 108 cases, \$6,294.
 Stockholm—Bicycle material, twelve cases, \$830.
 Stuttgart—Bicycles, one case, \$120.
 United States of Colombia—Bicycle material, one case, \$16.
 Venezuela—Bicycles and parts, two cases, \$29.

A law has been passed in the Ohio legislature under which wheelmen can only claim one-third of the road instead of one-half as in the past.



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IT WAS FUNNIER THAN A CIRCUS

Exploitation in Court of a Yellow Dog and Automobile Mix Up
Stirs the Lords and the Commons

The last circus, says the San Francisco Call, that visited the town of Sausalito was not half as funny as the trial of H. B. Larzerele, the automobilist, who amputated the tail of a yellow dog there last Saturday. It was unusual amusement for the residents who crowded the court room last night. His Honor Justice J. S. Bellrude drives the town bus in the daytime and dons the ermine at night.

When the case was called the court room was crowded with "Hillites" and "Townites." The former occupied the jury box and surroundings, while the rabble went way back and sat down on benches. Young men with vari-colored neck-cloths or stocks and hair parted to a nicety chaperoned the "Hillites," who were represented in the presence of Rev. Mr. Wilson, Mrs. Starkeeler, Mrs. Kilgariff, Mrs. Hickman, Miss Maud Miller, Miss Marion Harrison, Miss Zelda Tiffany, Mrs. Berry, Miss Grace Miller, Miss Anna Sperry, Mrs. Mason, The Misses Mason, Mrs. Captain Draper and the latter's bull pup "Sapho." Mr. Kilgariff thought it was a society function, so he came in full dress. "Billy" Harrison laughed so heartily at one of Prosecuting Attorney Pistolesi's sallies that he took a back somersault out of the jury box, mussing his hair.

Defendant Larzerele was late in court. He had been playing ping-pong and forgot the hour set for the trial. Although he possesses an "automobile face," no one would accuse him of being the "murderer" whom the prosecuting attorney tried to make him appear to be. Judge Langhorne defended Larzerele and he helped on the fun by stirring up City Attorney Pistolesi with caustic repartee. Whenever counsel made strenuous objections to a question asked witness, the court would settle the matter by judicially saying "cut it out." The question being "cut out," the attorneys would start over again.

Dr. E. E. Case, the prosecuting witness, is pound-master, denist, land agent, secretary of the Society for the Prevention of Cruelty to Animals; public executioner and general Poo Bah of Sausalito. He created

consternation during the trial by saying he saw the eminent jurist, Justice Bellrude, going up the hill last Saturday night with a—(load). The audience laughed boisterously until it was explained that Judge Bellrude had a crowd of people in his bus. Case testified that he shot the dog to end its sufferings, whereupon Langhorne asked for a dismissal of his client on the ground that Case killed the animal and not Larzerele. The motion was denied.

Pistolesi played to the gallery, which was represented by the "Townites," but the "Hill exclusives" scowled and hissed him from reserved seats in the orchestra. Pistolesi had sweet revenge, however, when Larzerele took the stand. He tangled that society gentleman up and then tried to force him to give the names of the

ladies who were with him when he bumped the cur. Larzerele declined, whereupon Pistolesi arose and scanned the room and pointing out a lady asked if she was in the wagon. The "Hill set" took the cue and left the court room in a body. The spectators then gave the prosecuting attorney the merry "ha ha."

Justice Bellrude took the case under advisement.

He is virtually between the "devil and the deep sea."

If he decides against Larzerele the "Hill" people won't patronize his bus, and if he exonerates the defendant the "Townites," who are friends of the pool sellers, will vote against him at the coming elec-



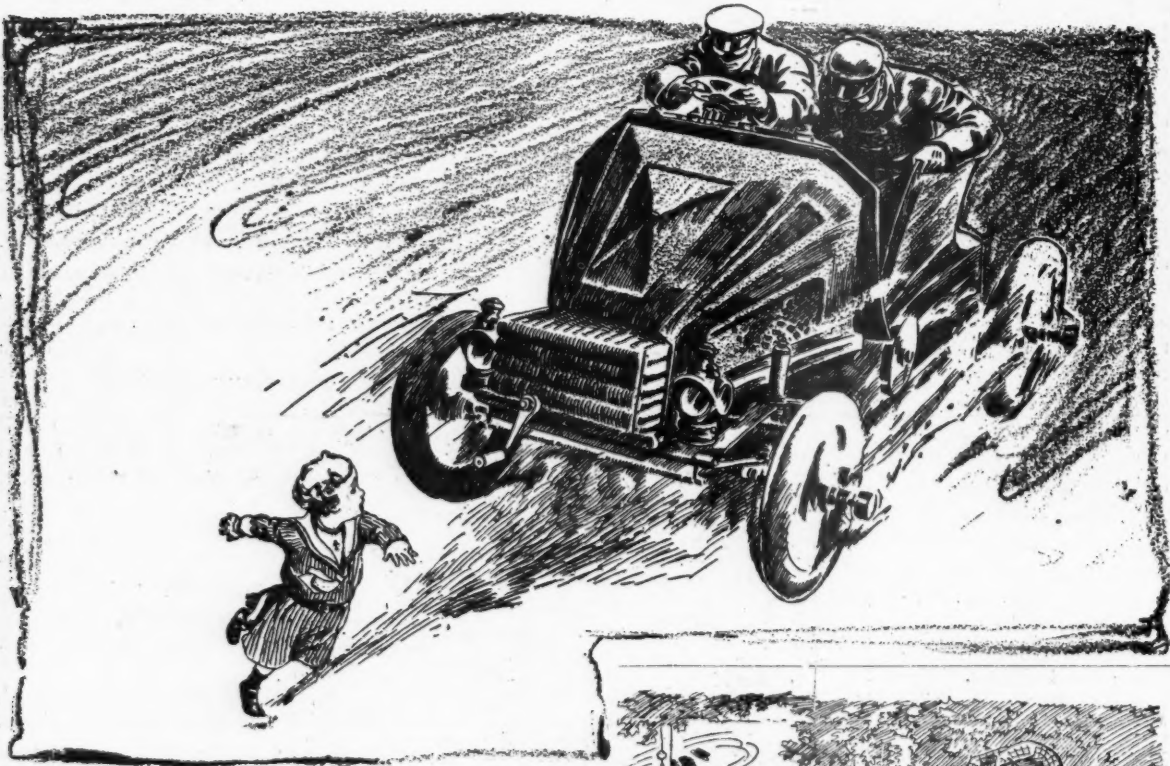
tion. He is doing some deep thinking.

In the meantime the "Townites" mourn the yellow dog, while the "Hillites" cry "long live the automobile."

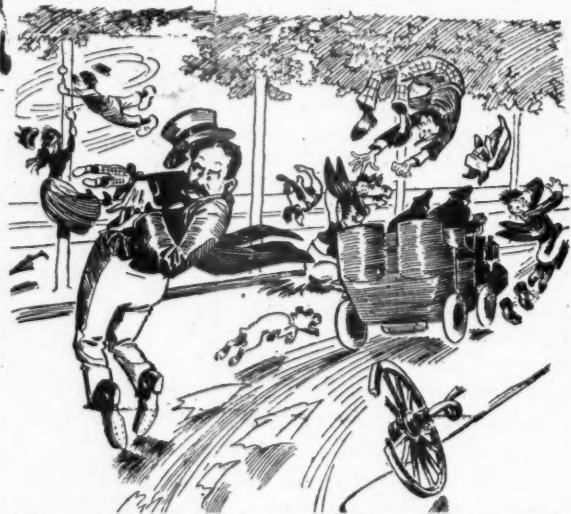
The first American tourists upon motor bicycles left New York last week and propose to make a 6-months' tour abroad. Otto Schnitzpahn and his brother Leo will tour Great Britain first and then visit other countries. They expect to make about 10,000 miles on their wheels. Both will use American motor bicycles. Leo is an artist and will make sketches of the trip.

The Alpha Motor Cycle Club expects to hold a 300-mile run about New Jersey on Decoration Day and two following days. Leaving Jersey City the members will go to Philadelphia the first day, to Atlantic City and Point Pleasant the second and through Asbury Park to New York the last day. Unattached riders will be made welcome.

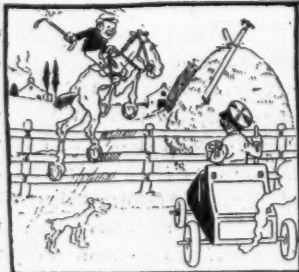
"TO SEE OURSEL'S AS ITHERS SEE US."



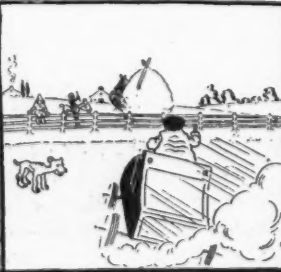
Mayor Patten, of Evanston, seeks to entrap law breakers but finds them too wise.—Chicago American.



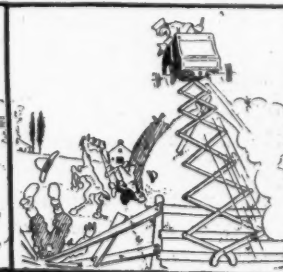
MAYOR HARRISON OF CHICAGO—"These wild autos must be suppressed."—Chicago Record-Herald.



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That so?



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The farmer ??
—Cincinnati Post.

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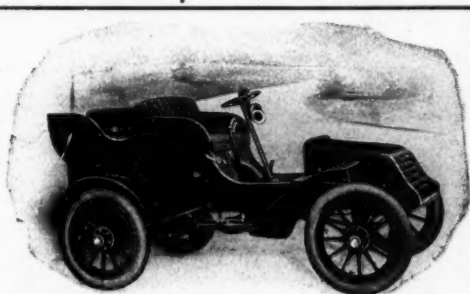
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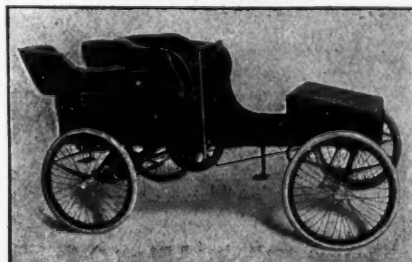
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Model 15—Price, \$900.

Attachable Tonneau for 4 people. Six Brake Horse Power Motor. Speedy, Reliable and a Good Hill Climber. Gasoline capacity, 200 miles. Includes all features usually found on \$2,000 Cars.

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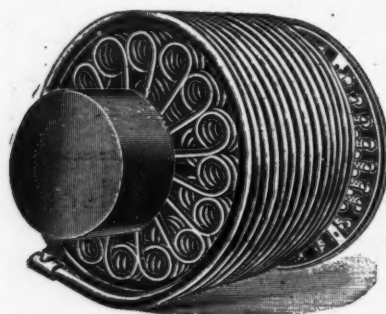
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THE ORIGINAL MOTOR-CYCLE.



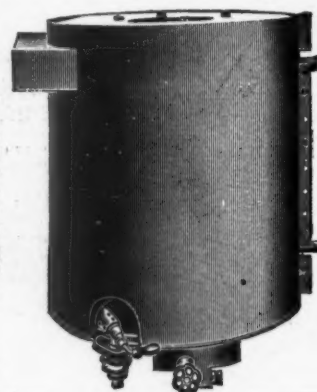
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We are now shipping to BELGIUM, GERMANY, RUSSIA and to many other foreign countries, which, together with the enormous demand for our home trade and the DOMINION OF CANADA, gives us more than we can do. We have since January first very materially increased our capacity and are still increasing it. We are now weeks behind on our orders, but hope with our increased facilities soon to be able to supply the demand. Our boiler will make from cold water 350 lbs. of steam in 2 minutes and 45 seconds from the lighting of the burner. Our boiler cannot burn out, neither can it explode; features of the utmost importance to all users of steam.

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Works: NEWARK, N. J., U. S. A.



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THE OLDSMOBILE RUNS EVERYWHERE

It's the thoroughly practical Motor Vehicle—emphasize that word practical—for every day in the year. Spring, Summer, Autumn, Winter. The Oldsmobile is always instantly ready for starting, with the power to keep everlastingly going. Price \$650, f. o. b. Detroit.

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is the name found on all the best

AUTO ENGINES and APPLIANCES

No Maker or User of an Automobile can afford not to send a postal card for our illustrated Catalogue, which gives full description and prices of all our Engines and Appliances.

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ONE HUNDRED PER CENT EFFICIENCY

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TWO Standard Toledos

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TWO trips without penalized stops

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HAND LANTERNS.

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See the New Gun
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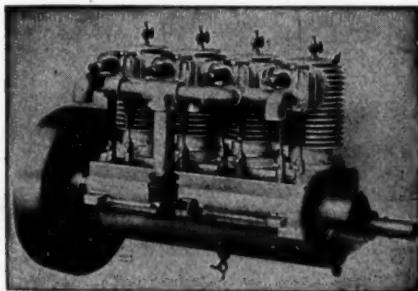
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Upright Gasoline Motors
Both Air and Water Cooled

For Automobiles, Launches and Stationary Use
From 1 to 150 Horse Power



Also AUTOMOBILES of Every Style.
DELIVERY WAGONS, OMNIBUSES and
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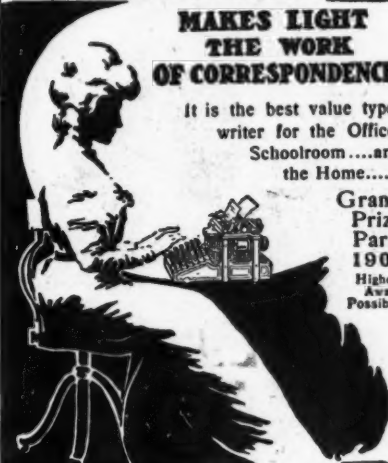
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**MAKES LIGHT
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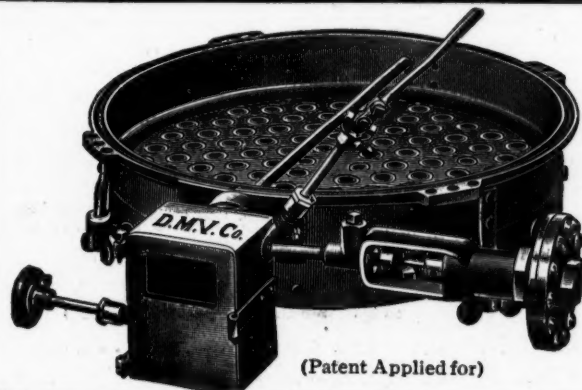
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(PATENT APPLIED FOR)

One-piece cast-iron Burner. Can't warp or break;
will not burn back or blow out. Pilot Light
burns constantly while carriage is in use. Generator
and Pilot Light can be attached to other burners.

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We make Engines, Boilers, Running Gears, and
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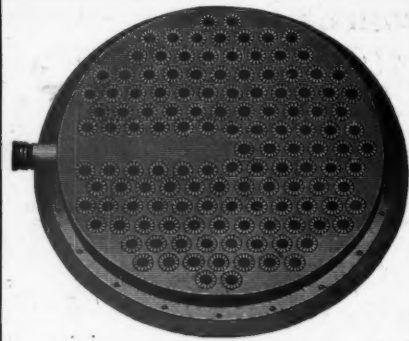
DAYTON, OHIO.

The WOODWARD BURNER

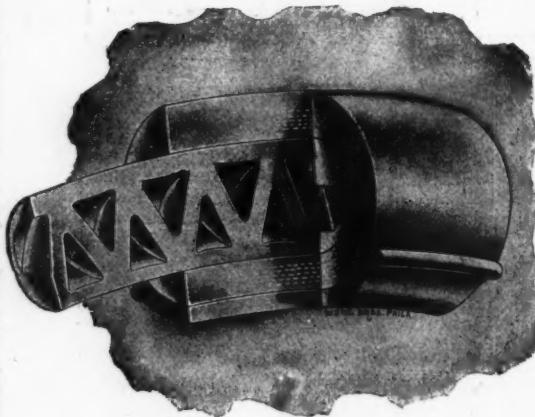
We Believe In It and Recommend It
Buyers Believe In It and Recommend It

Faith in one's own product is one of the secrets of success in marketing. We have unqualified faith in THE WOODWARD BURNER. :: It has a record of Fifteen Miles on One Gallon of Gasoline. :: Its construction is scientific. Its top plate is flexible and Tubes screw in bottom plate, and if for any cause Tubes have to be removed all that is necessary is a wrench. It makes no carbon. It cannot backfire—absolutely impossible. It makes steam so that even on hills you have enough and to spare. Its flame is blue and twelve inches long, which means that it gives more heat than other burners. It is durable—will last as long as any other part of the vehicle. We guarantee this. :: For proof of any and all claims here made we refer to the boiler itself. :: It will prove them to your satisfaction if you will give it a trial.

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Built on the truss principle, it's strong and the strain is equally distributed.

Amplly resilient yet defies destruction or disabling by puncture.

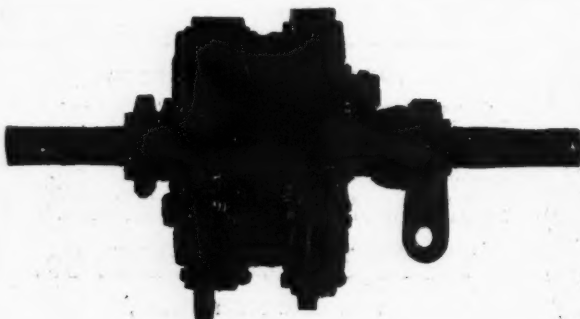
Can be used until completely worn out.

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ARE
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Transmission Gear.

TWO SPEEDS FORWARD
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Satisfaction Guaranteed

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ABSOLUTE CONFIDENCE *Rambler*

is engendered by riding a

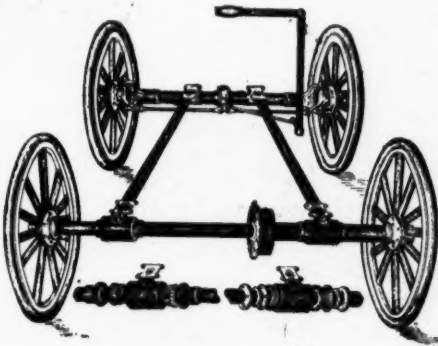
Hydro-Carbon Carriage. The speed is controlled by the pressure of the thumb; the ignition is automatically regulated, and consequently occurs at exactly the correct time. The only gasoline carriage suitable for a lady's use. Send for new Catalogue M-A.

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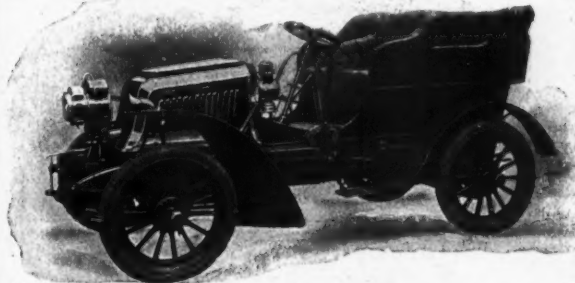
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Strong and Simple Construction.

Three and Four Cylinders.

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Easy to Control; Always Reliable.

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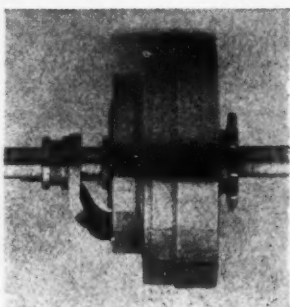
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NEAT AND
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Two Speeds Forward and Reverse.

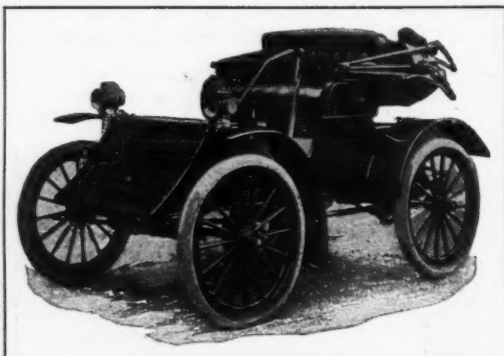
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TRIED AND PROVEN**

WRITE FOR PRICES.

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on the merits of a special vehicle constructed for the sole purpose of entering any special contest.

EVERY TYPE WE MAKE HAS WON THE COVETED BLUE RIBBON

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on an automobile either increase or retard its speed. Resilient tires give additional power and greater mileage.

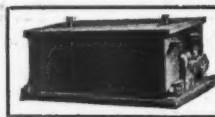
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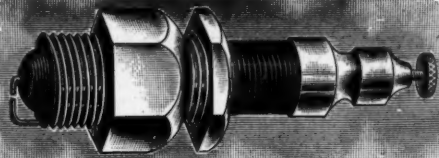
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point for point is the equal of any Gasoline Automobile sold in the United States for \$1200, and is the only machine equipped with a double cylinder balanced engine that retails for less than that amount. They will climb any grade up to 30 per cent, and develop any speed up to 30 miles per hour. Absolute and instantaneous control. Every engine guaranteed to develop 8 h. p.

Hung on platform springs front and rear.

OUR PRICE THIS YEAR, \$750

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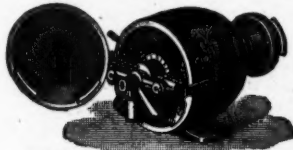
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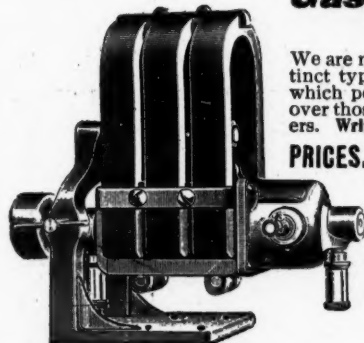
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A DeDION TRICYCLE

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1 1/2 h. p. Engine. Fine running order Paint raked off at few places but good running order. Guaranteed. French tires, never been punctured. : : : : :

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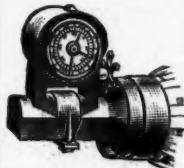
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Rings a bell at each mile and is practically an **Odometer and Speedometer** in one. Handsome in appearance and indestructible. Send for descriptive circular.

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ABSOLUTELY NO LOSS OF POWER

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Made in all sizes. Low in price. Send for particulars.

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Stamped parts for Ball and Roller Bearings. Write for prices and samples

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MODERN CYCLE REPAIRS

ONE DOLLAR TO MOTOR AGE

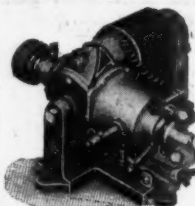
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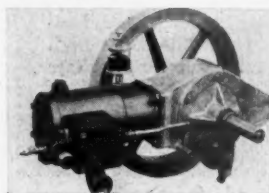
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SOLE UNITED STATES AGENT.



To Owners of Gasoline Engines,
Automobiles, Launches, Etc.
The **Auto-Sparker**

does away entirely with all starting and running batteries, their annoyance and expense. No belt—no switch—no batteries. Can be attached to any engine now using batteries. Fully guaranteed; write for descriptive catalog.

MOTSINGER DEVICE MFG. CO.
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STUTZ MOTOR : \$150

A perfectly balanced Engine producing $\frac{1}{2}$ actual horse power without vibration. Valves and all joints ground fits. No gas jets to blow out. Thoroughly water jacketed including spark plug. Aluminum Crank case. Long phosphor bronze bearings. WORKMANSHIP and RESULTS unequaled by any motor in the world. Write for cata. Discounts to jobbers & manufacturers. Stutz Mfg. Co., Ringold & May St., Dayton, Ohio.



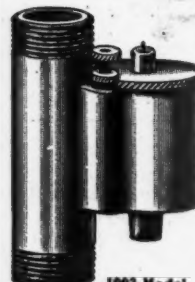
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**SINGLE,
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TRIPLET,
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Lightest, Nearest Dust Proof, and Easiest Running Hanger in the World.

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1902 Model.
Patents Pending.

THE KINGSTON NOISELESS AUTOMATIC CARBURETER.

If you have a gasoline engine that troubles you, or a gas engine that you wish to convert into a gasoline engine you need this Carbureter, the only reliable system for automobile or bicycle motors. Will stand any amount of vibration, is noiseless, light; no valves in motion when once adjusted to an engine; never needs to be shut off or changed.

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DIXON'S Graphite Compound

is indispensable for sparking plugs and for all pipe connections on steam or gasoline automobiles. It makes perfectly tight joints that can be opened at any time with ease.

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CLARK DETACHABLE
AUTOMOBILE **TIRES**
MAKE DRIVING A PLEASURE

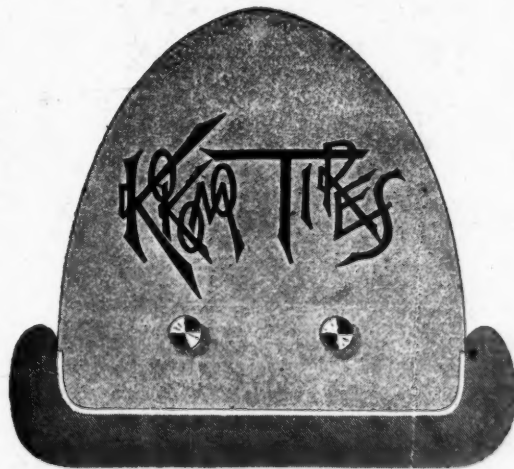
FIT ANY CRESCENT RIM
EASILY REPAIRED
CANNOT RIM CUT

OUR CATALOGUE TELLS
CLARK TIRE CO. CHICAGO



KOKOMO TIRES

Solid and
Pneumatic



KOKOMORUBBERCO.
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THE LATEST VICTORY.

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ON TRACK AND ROAD
AT HOME AND ABROAD
IN RAIN OR SUN
PACED OR UNPACED

CLEVELAND BICYCLES

ARE WINNERS

Then we have the Columbia, Crescent, Tribune, Rambler, Monarch, Imperial and Juvenile machines. Their popularity is attested by an unprecedented sale. Watch them in Chicago on Decoration Day

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